



# ATLAS NOTE

GROUP-2016-XX

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Draft version 0.0

## Kinematic studies

### Supporting documentation for the search for new phenomena in diphoton events with the ATLAS detector at $\sqrt{s} = 13$ TeV

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174 **1 Introduction**

- 175 • h011 MxAODs

176

- 177 • Plots:

178 - Black: data

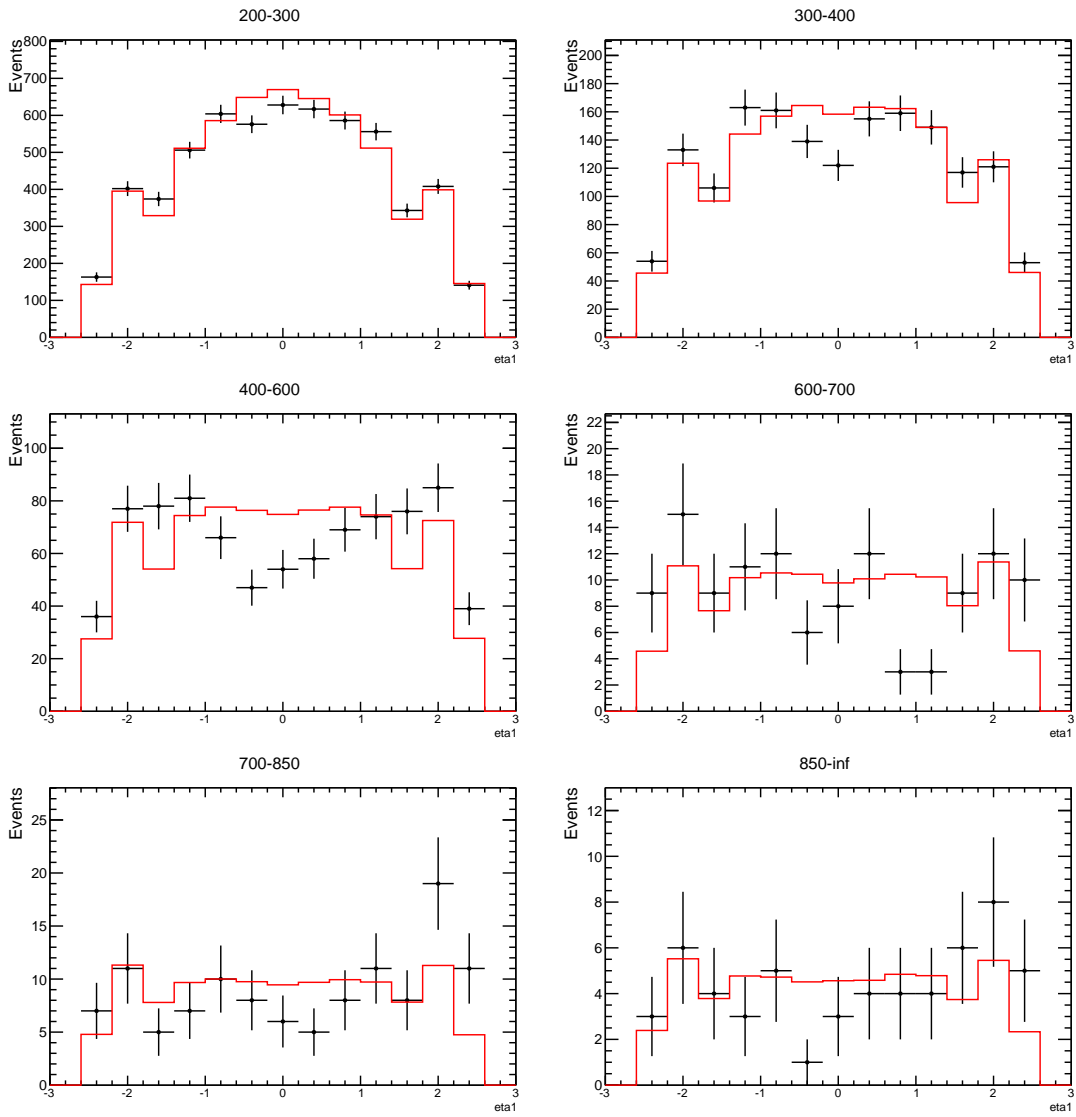
179 - Red: Sherpa gamma-gamma

180 - MC normalized to data in each plot

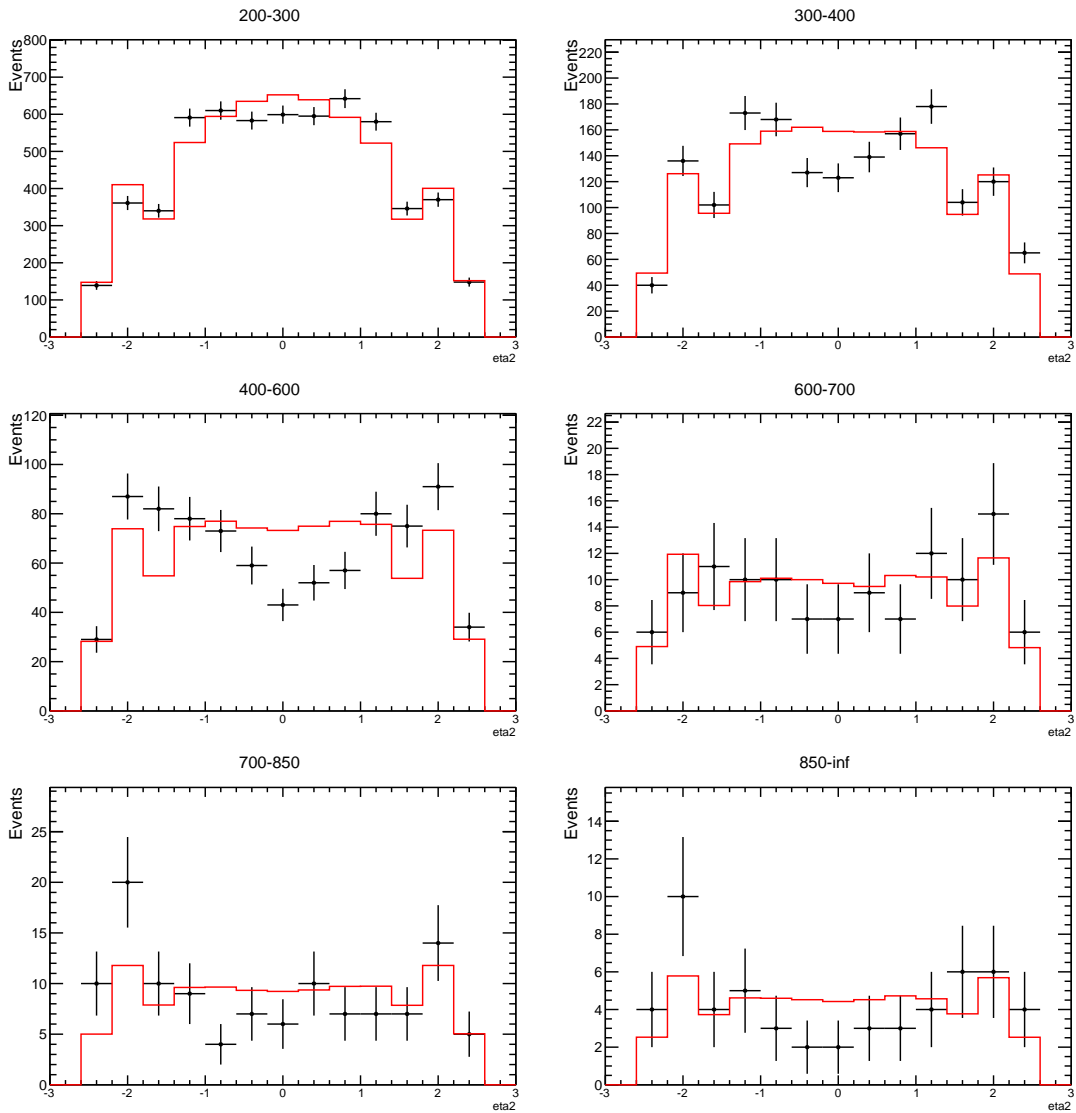
181 **2 Exotics**

182 **2.1 Inclusive**

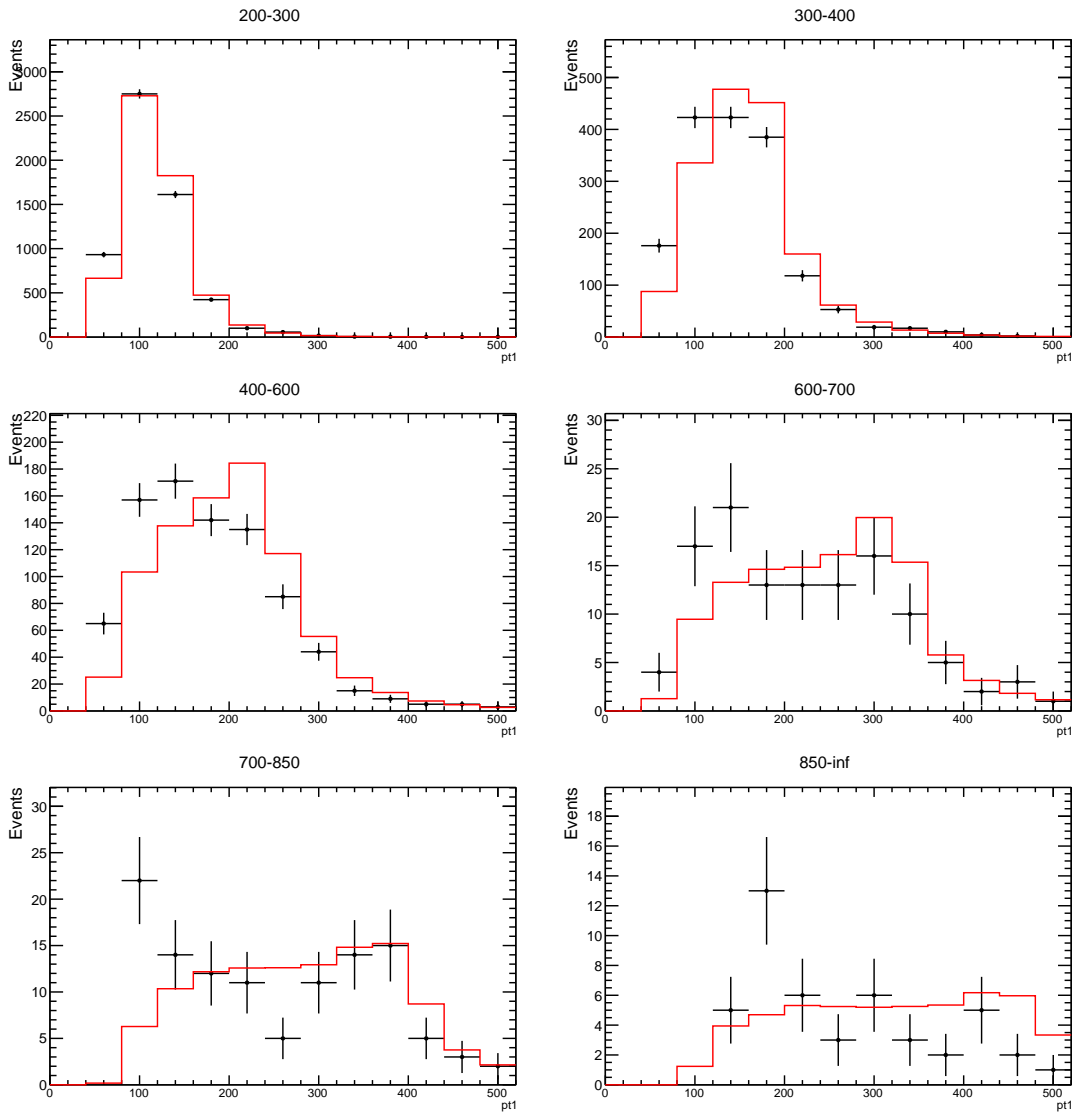
183 **2.1.1 Eta1**



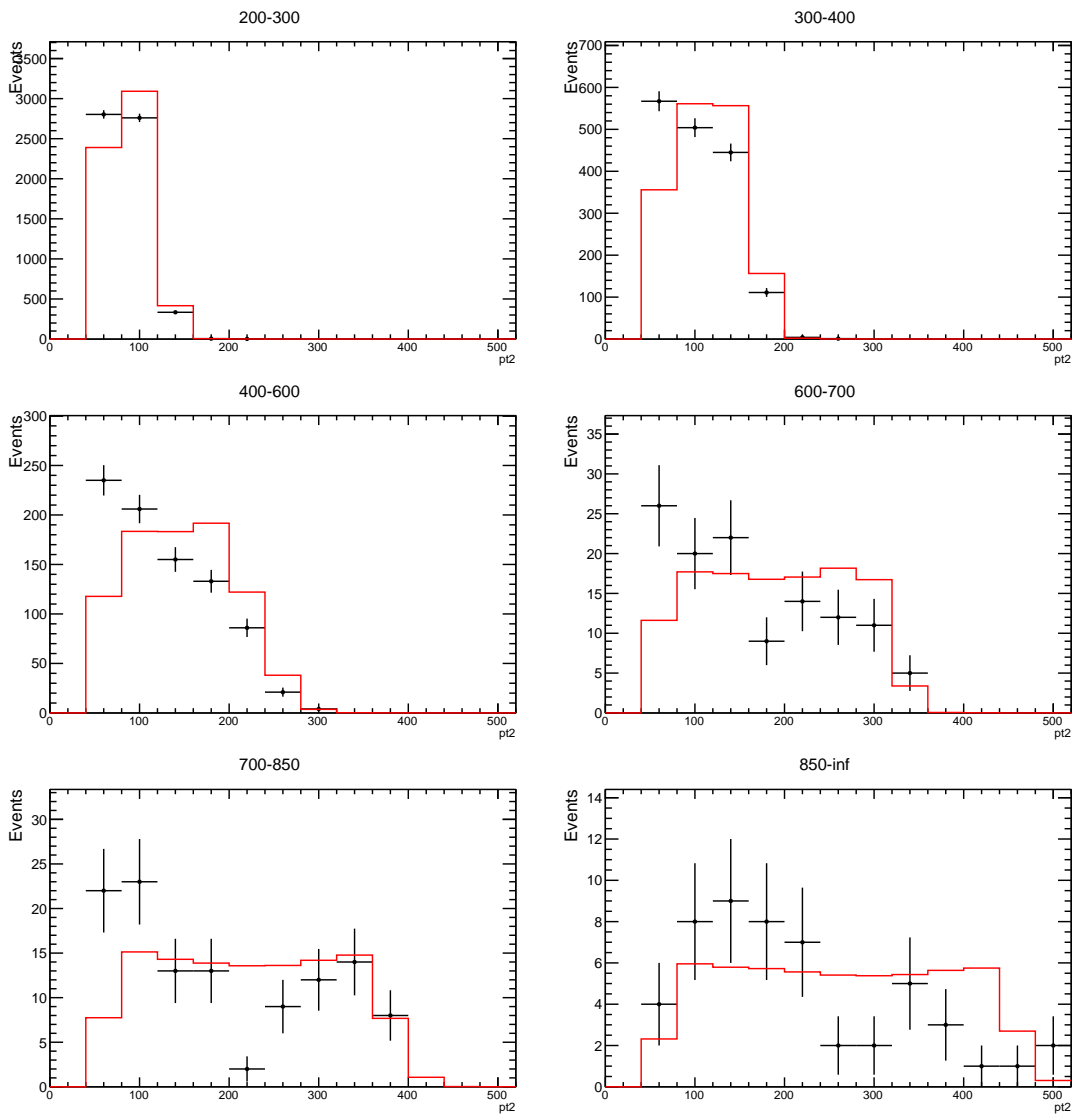
184 2.1.2 Eta2



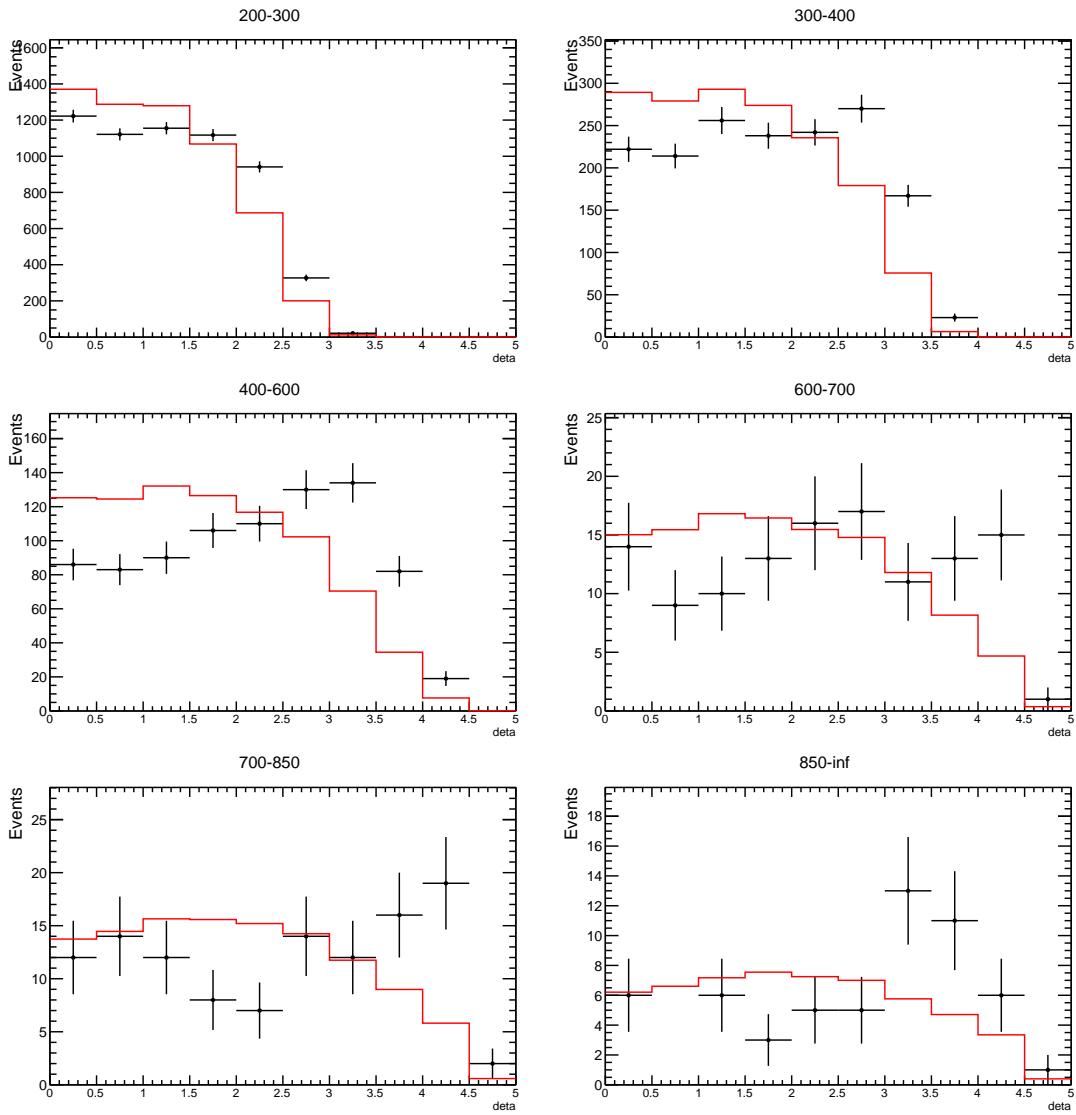
185 2.1.3 Pt1



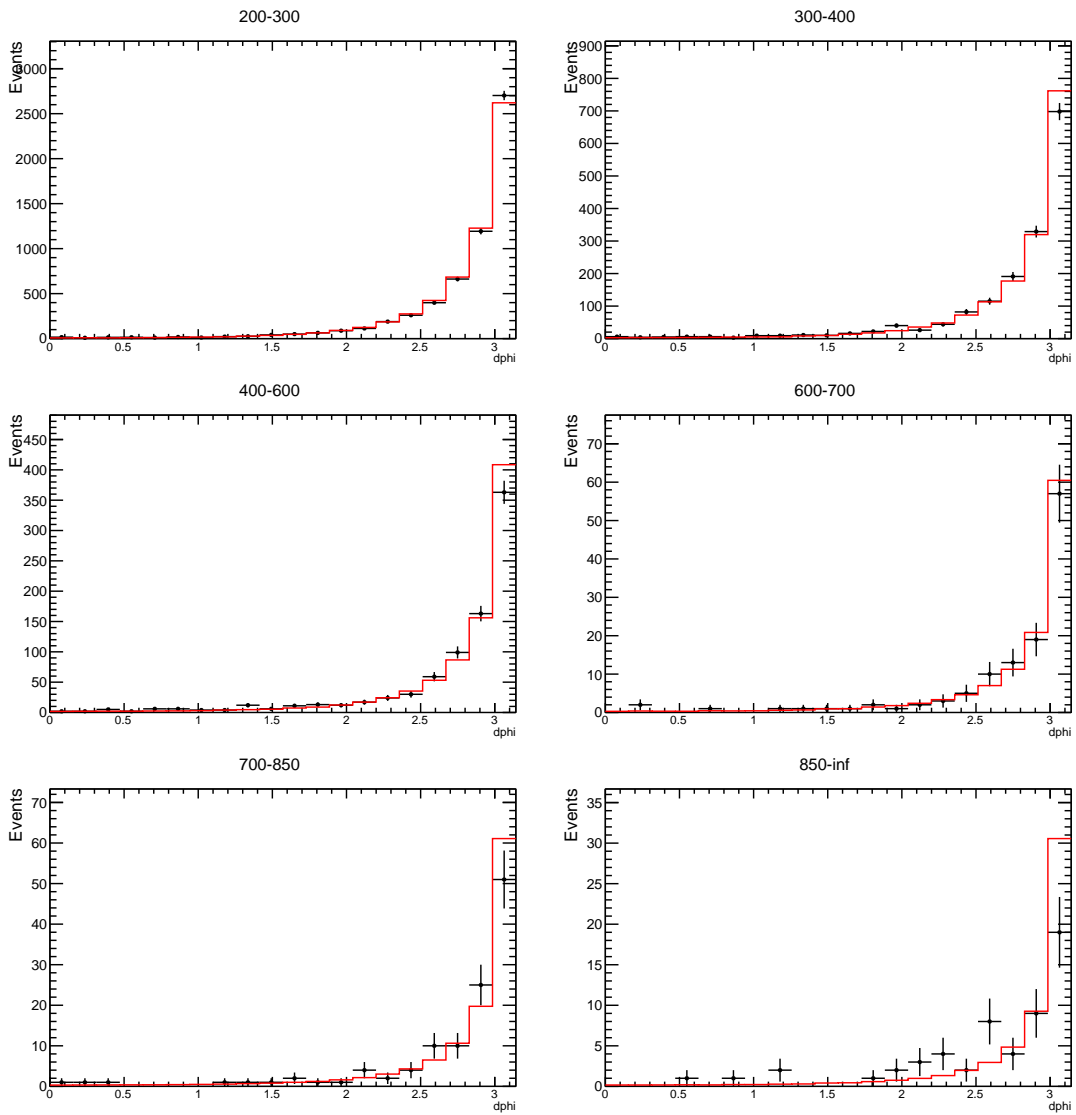
186 2.1.4 Pt2



187 2.1.5 Deta

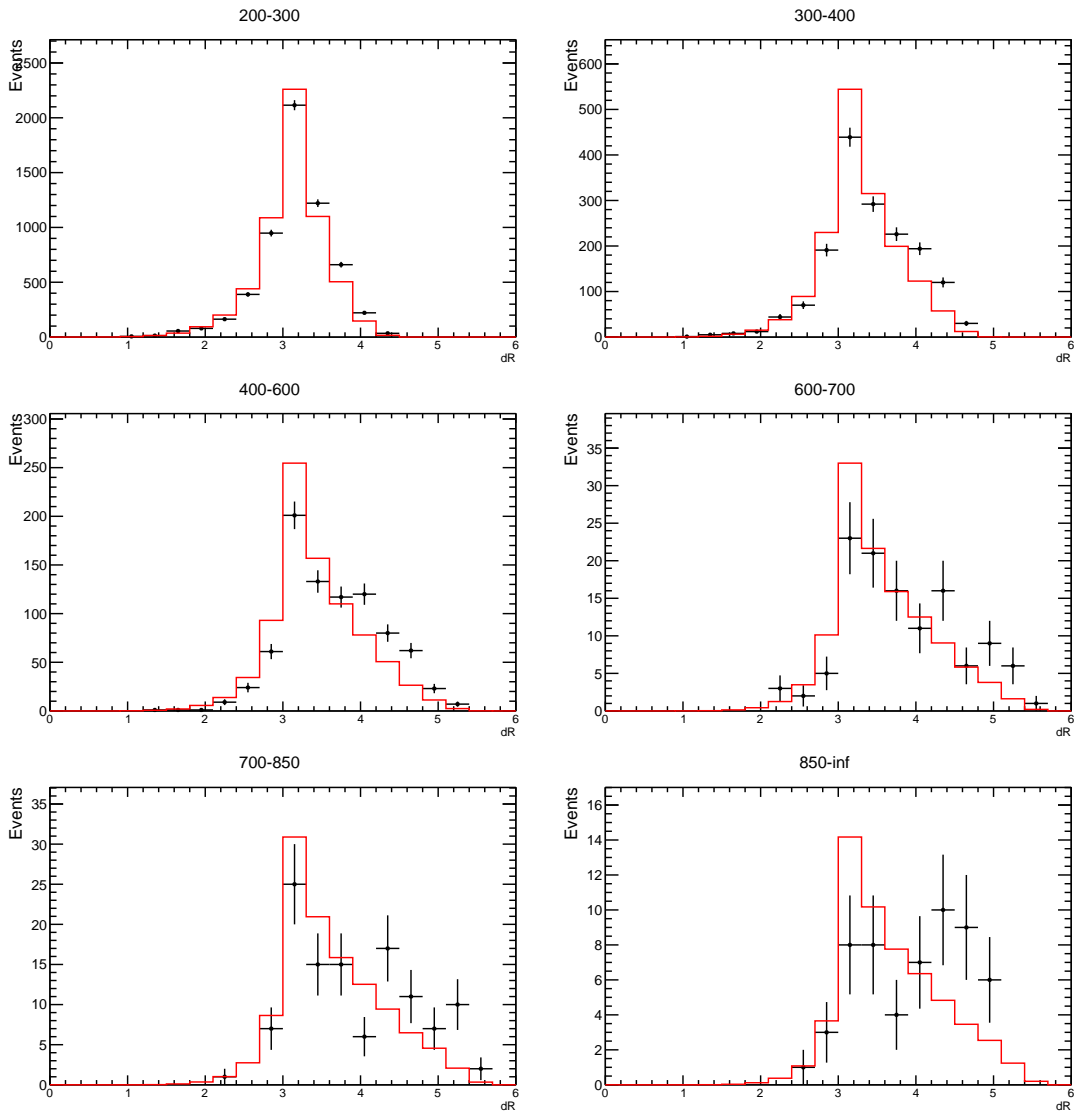


188 2.1.6 Dphi

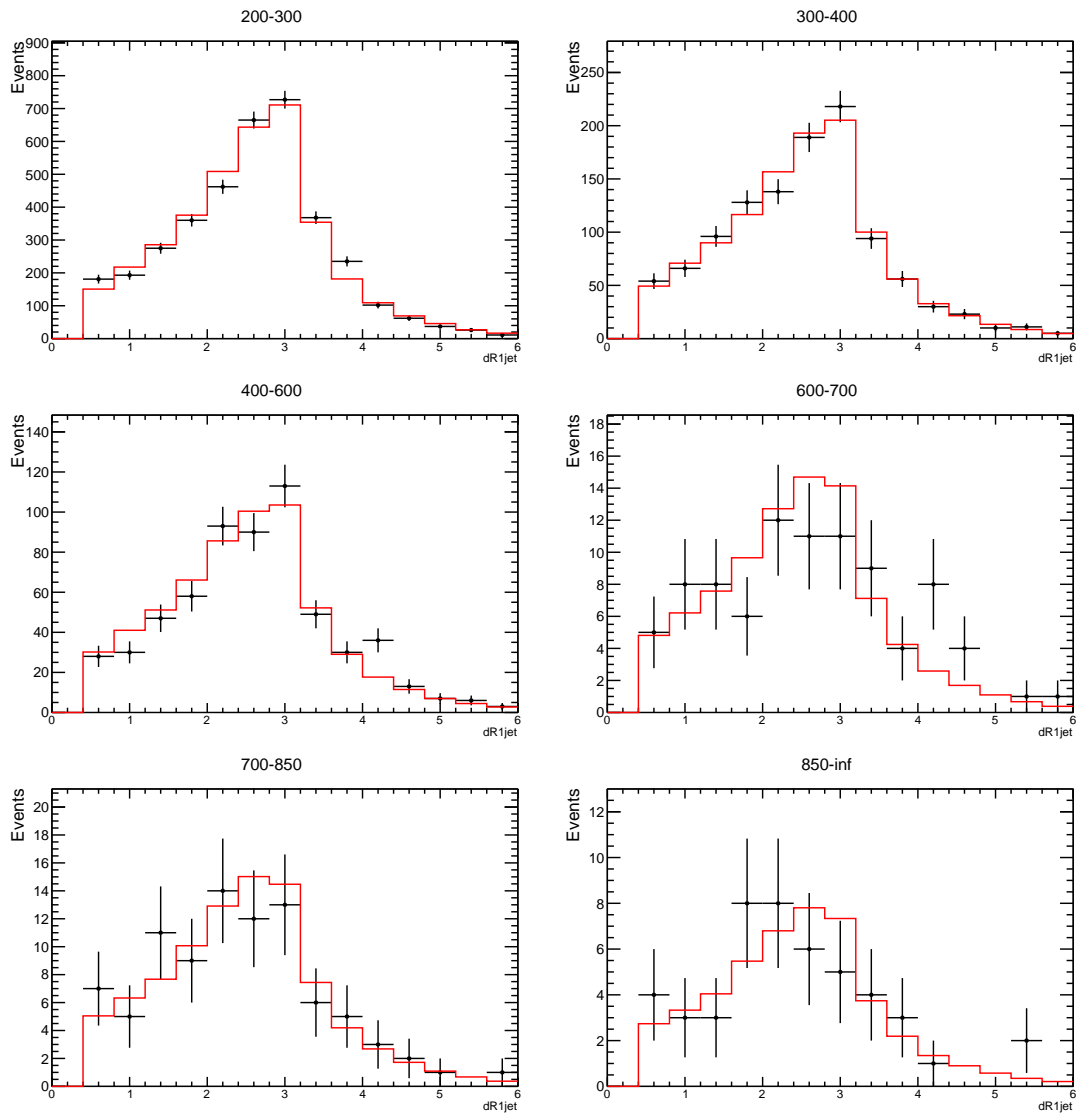




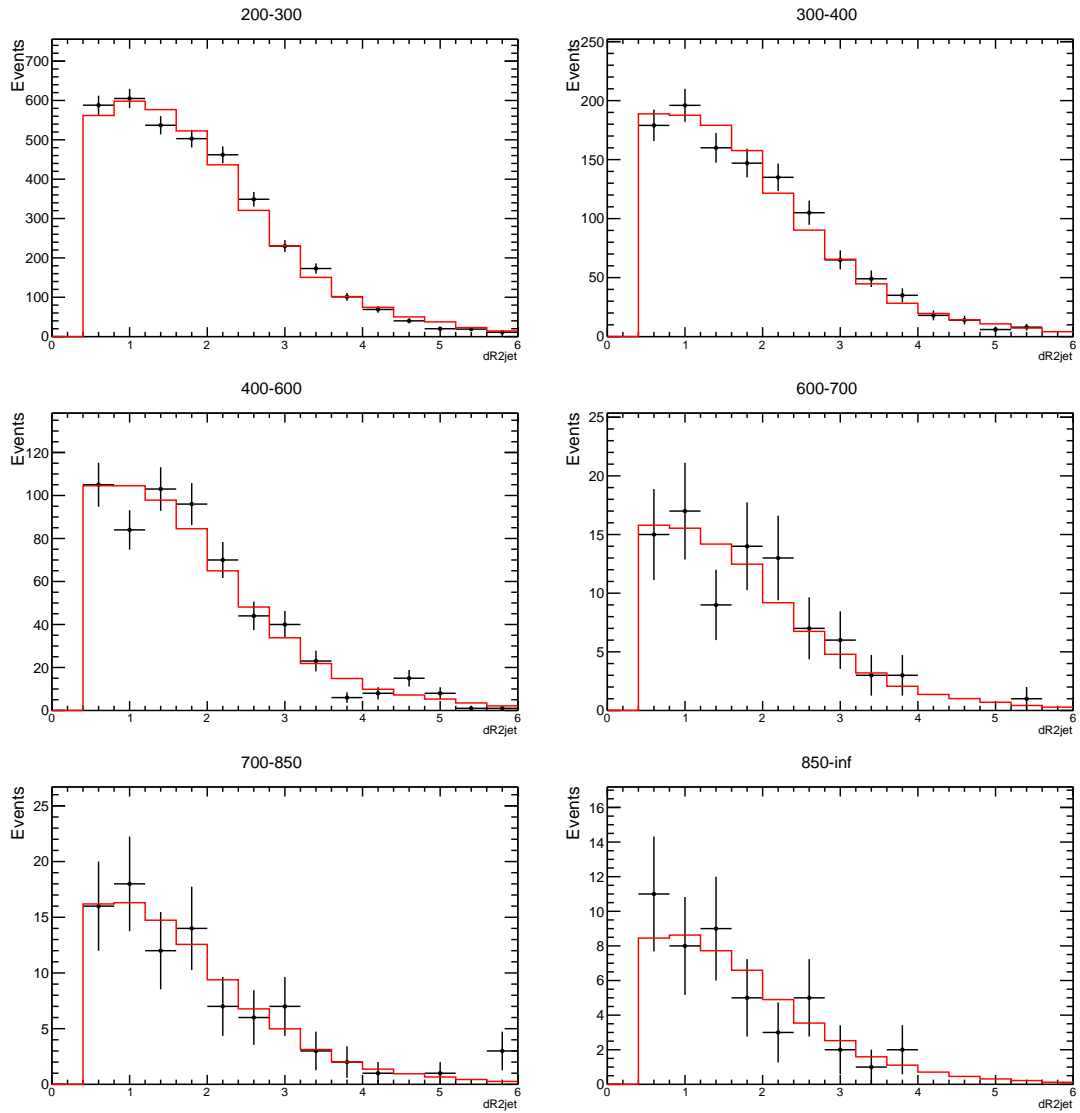
189 2.1.7 DR



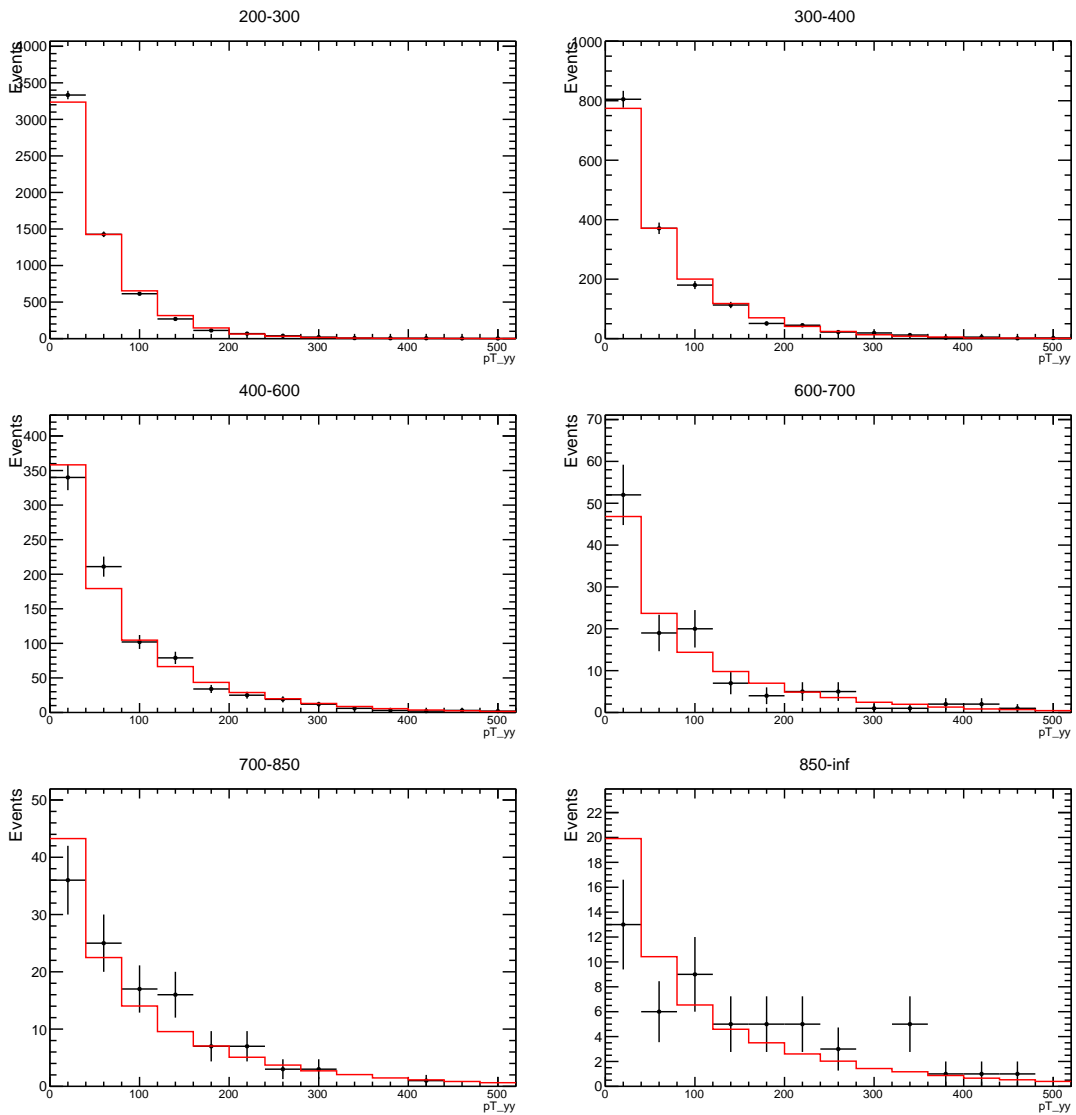
## 190 2.1.8 DR1jet



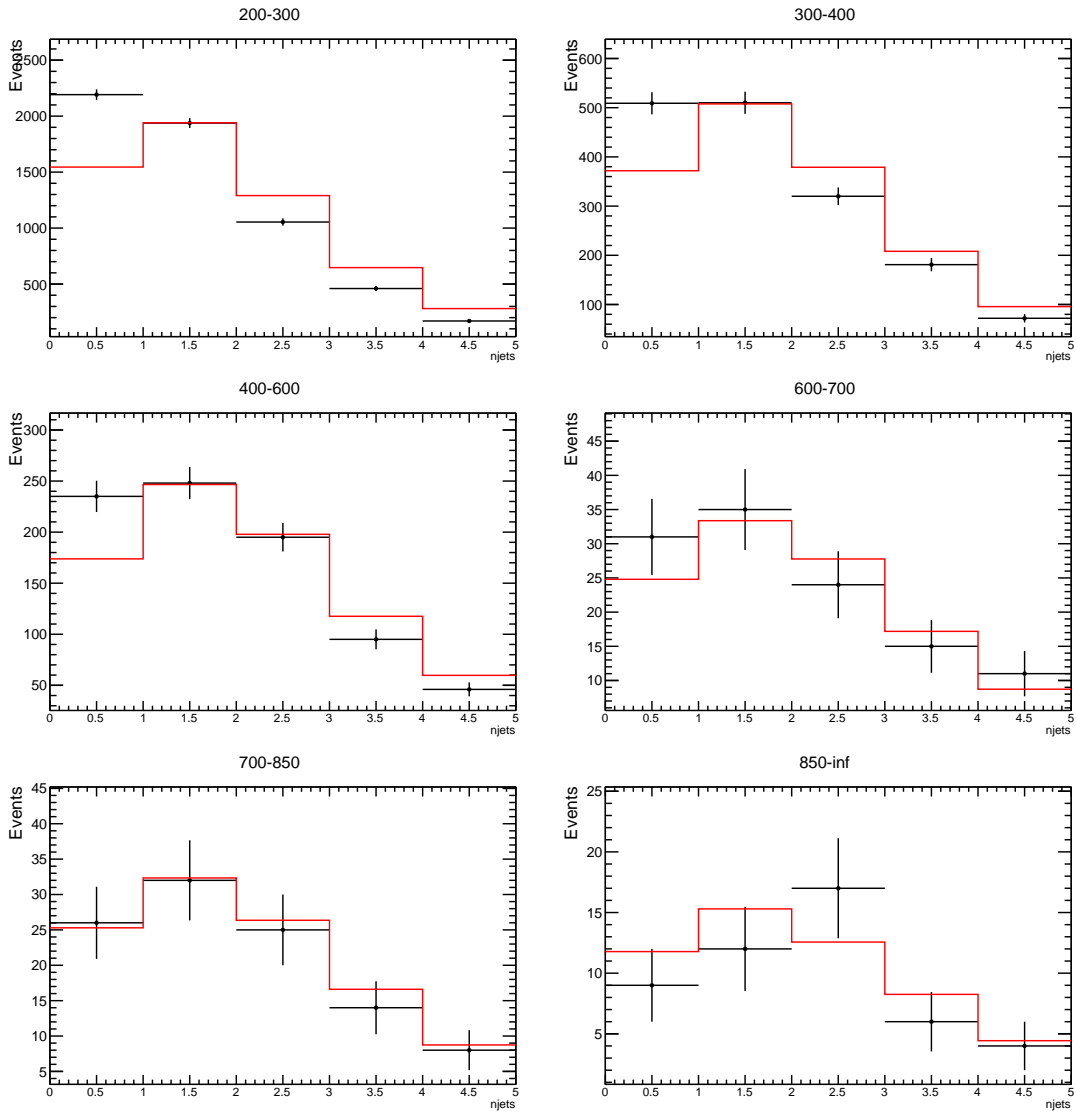
## 191 2.1.9 DR2jet



192 2.1.10 ptyy

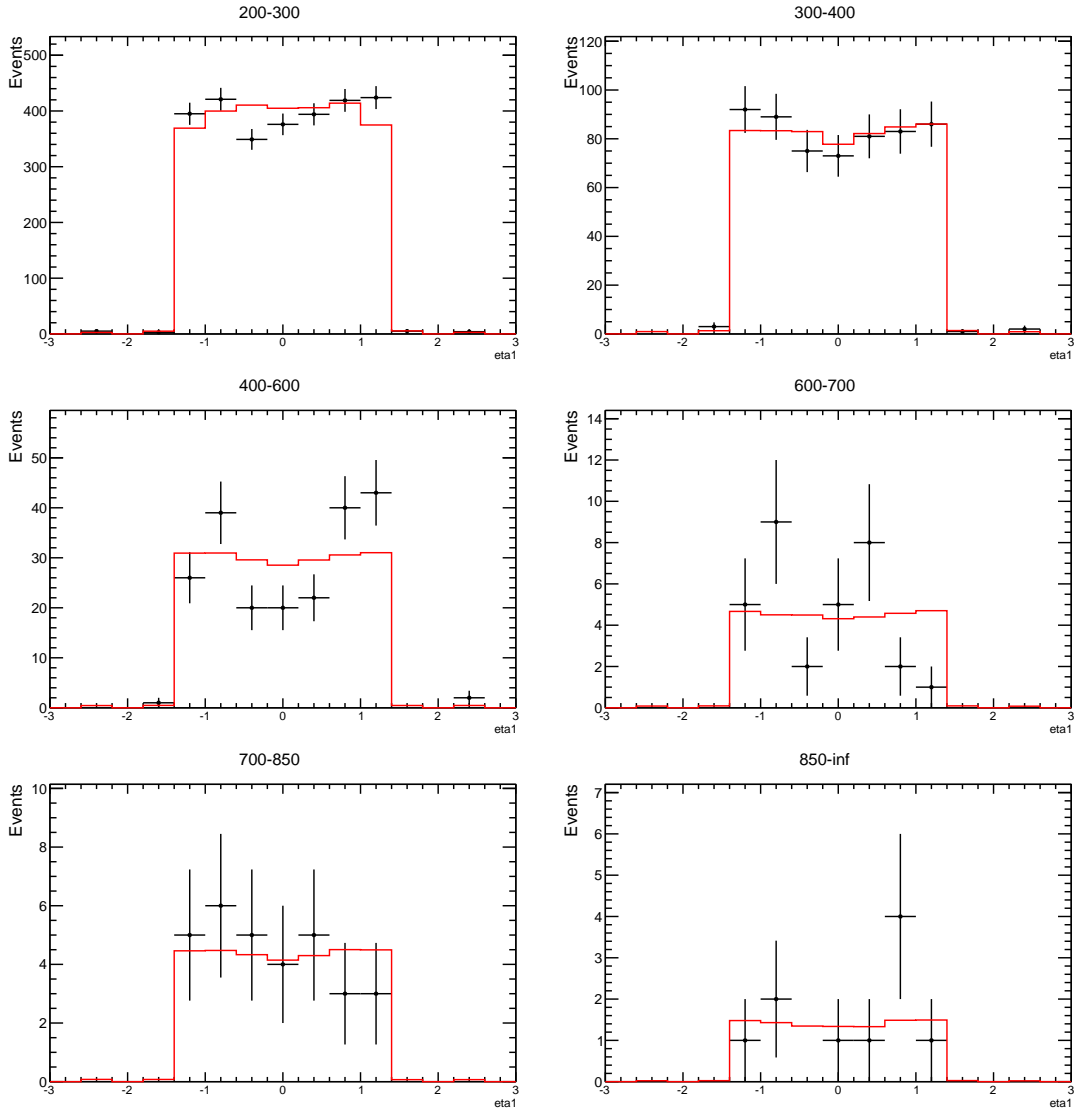


193 2.1.11 Njets

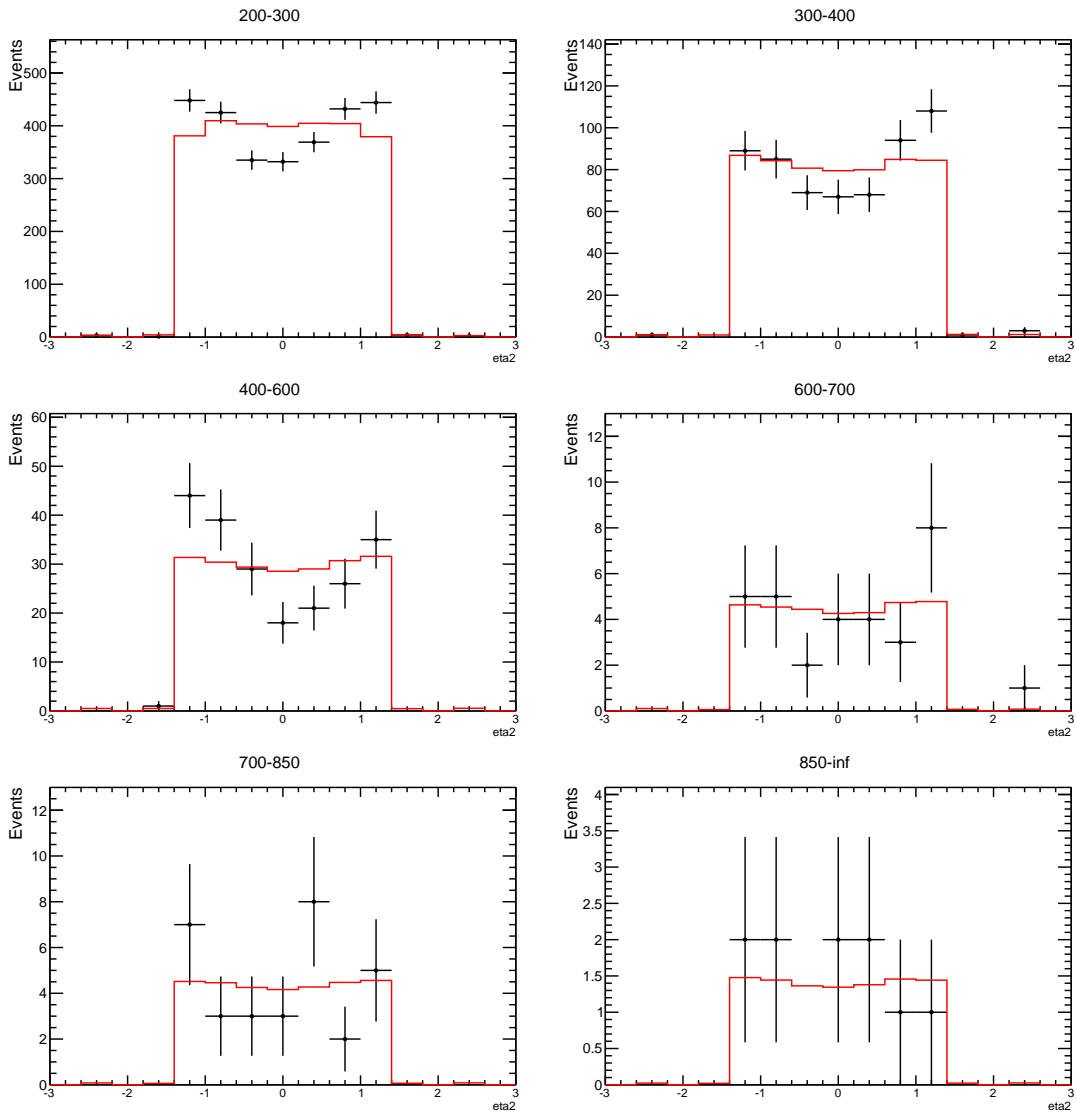


194 **2.2 BB**

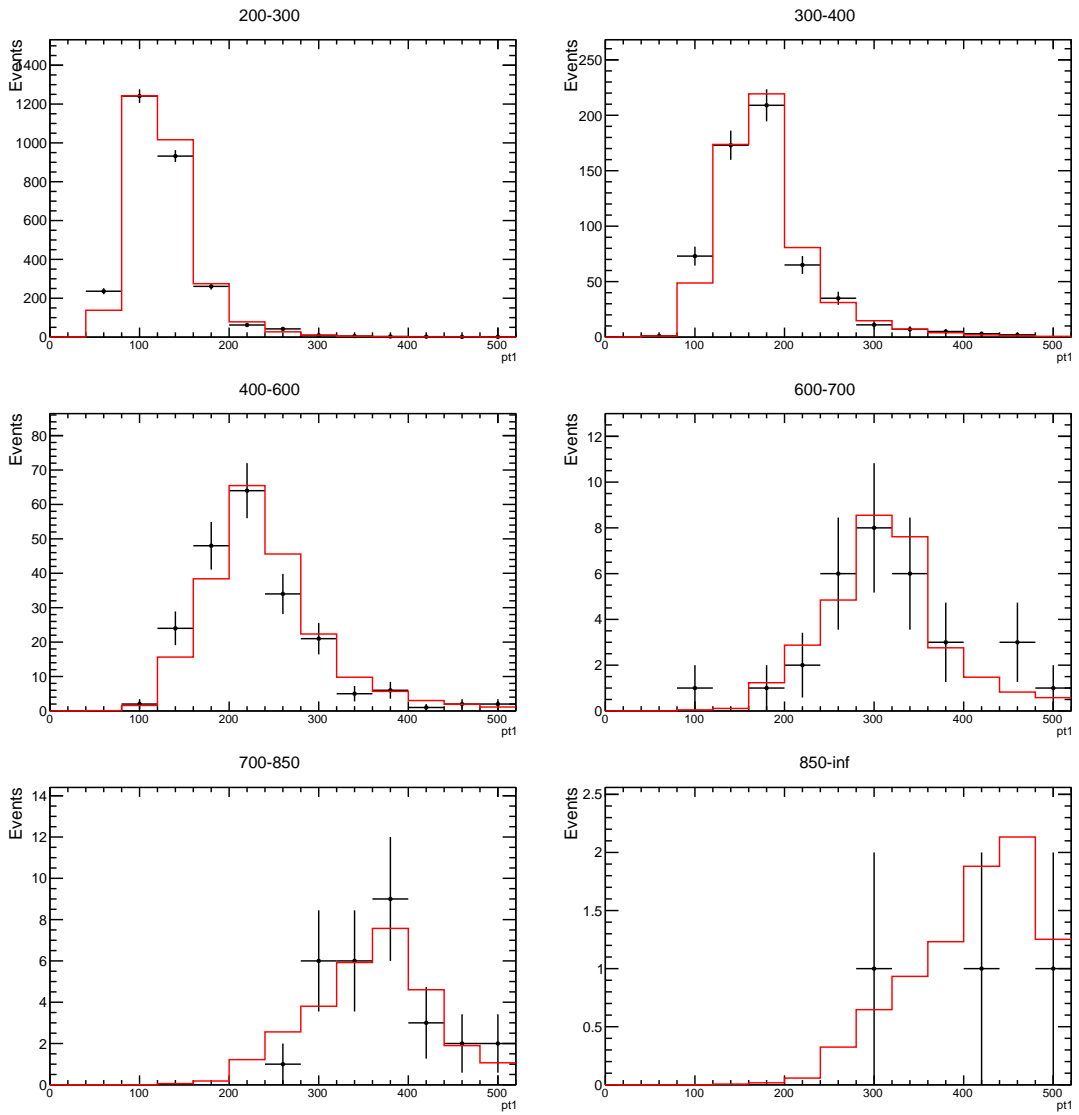
195 **2.2.1 Eta1**



196 2.2.2 Eta2

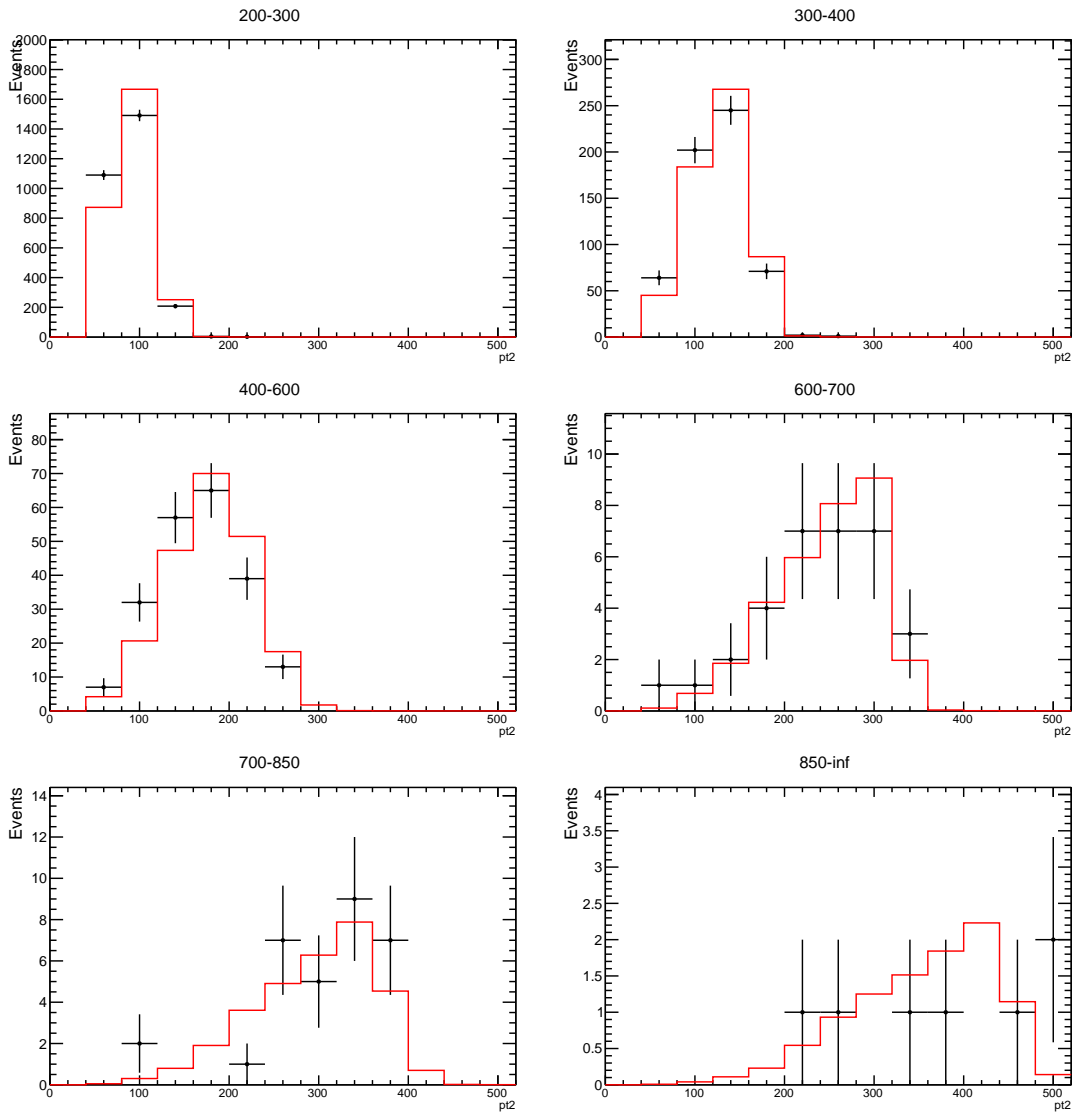


197 2.2.3 Pt1

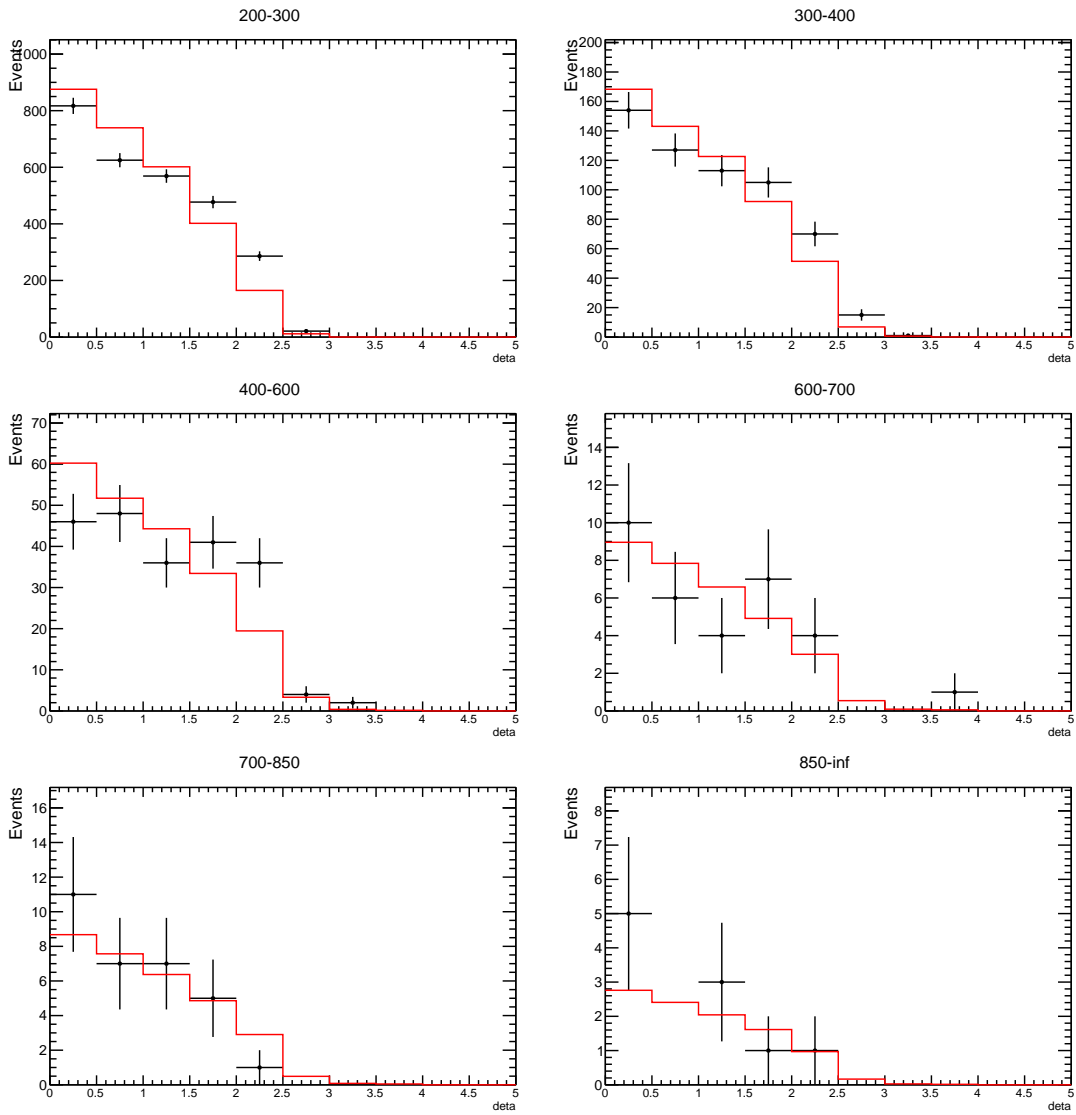




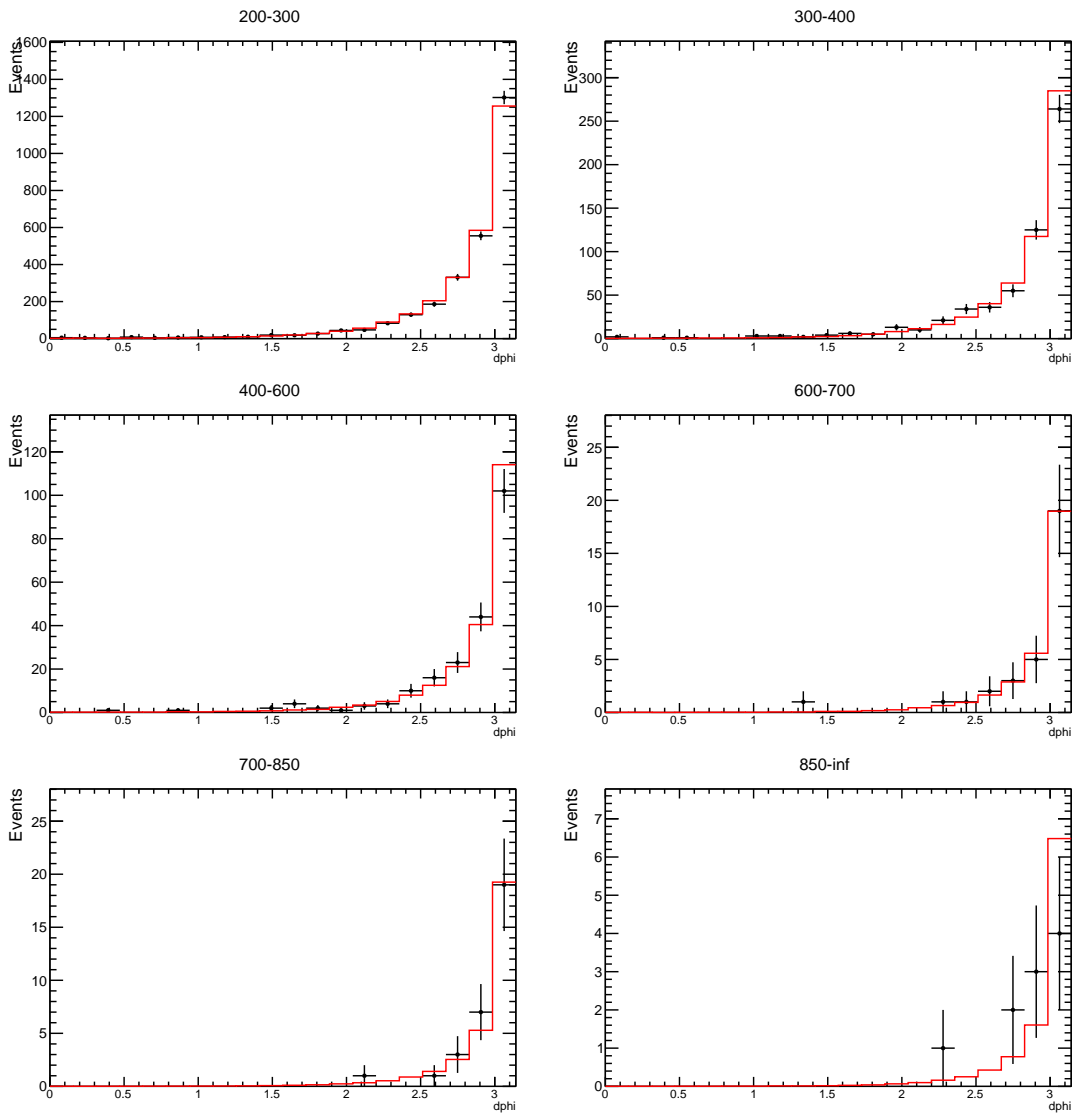
198 2.2.4 Pt2



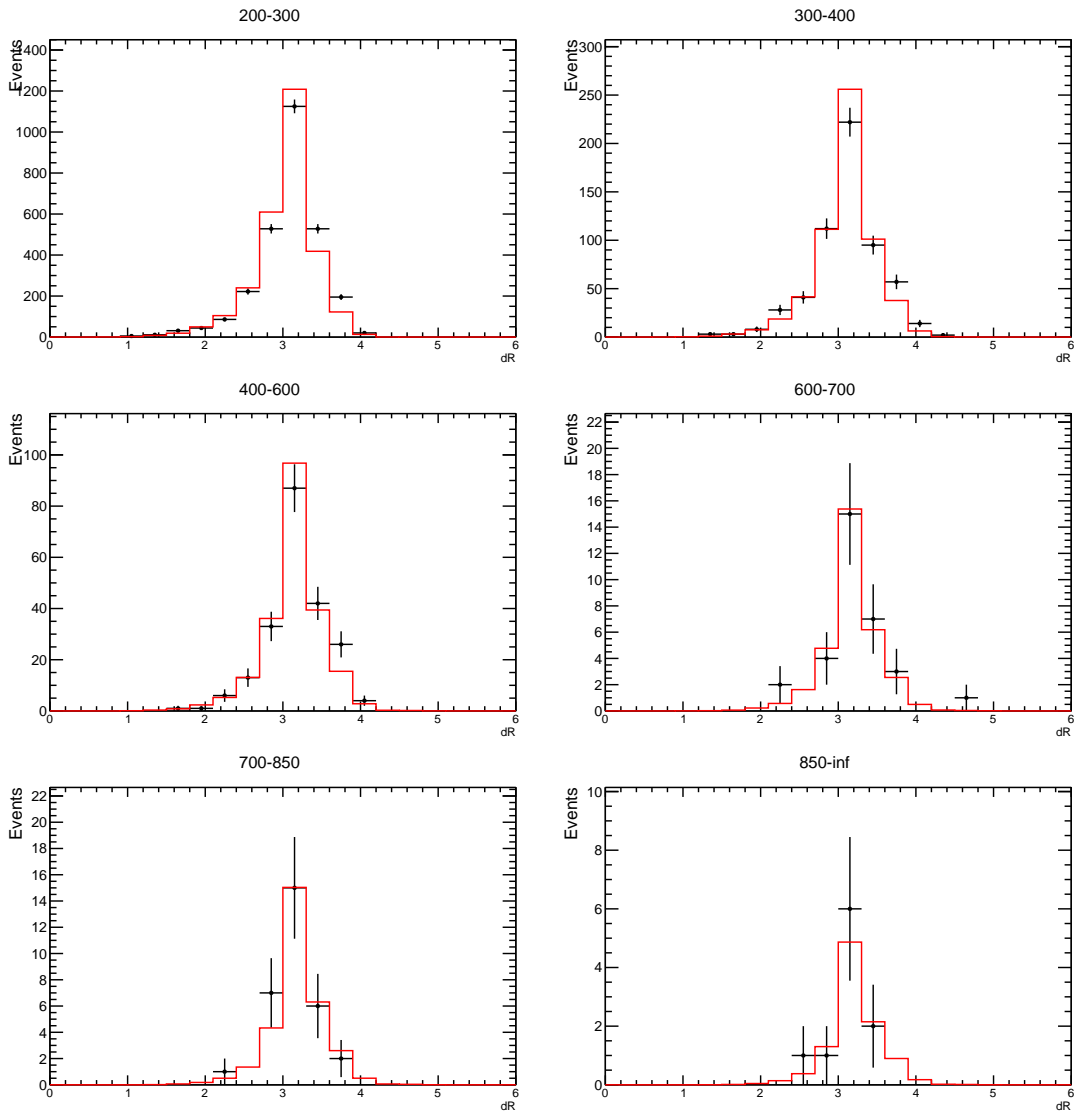
199 2.2.5 Deta



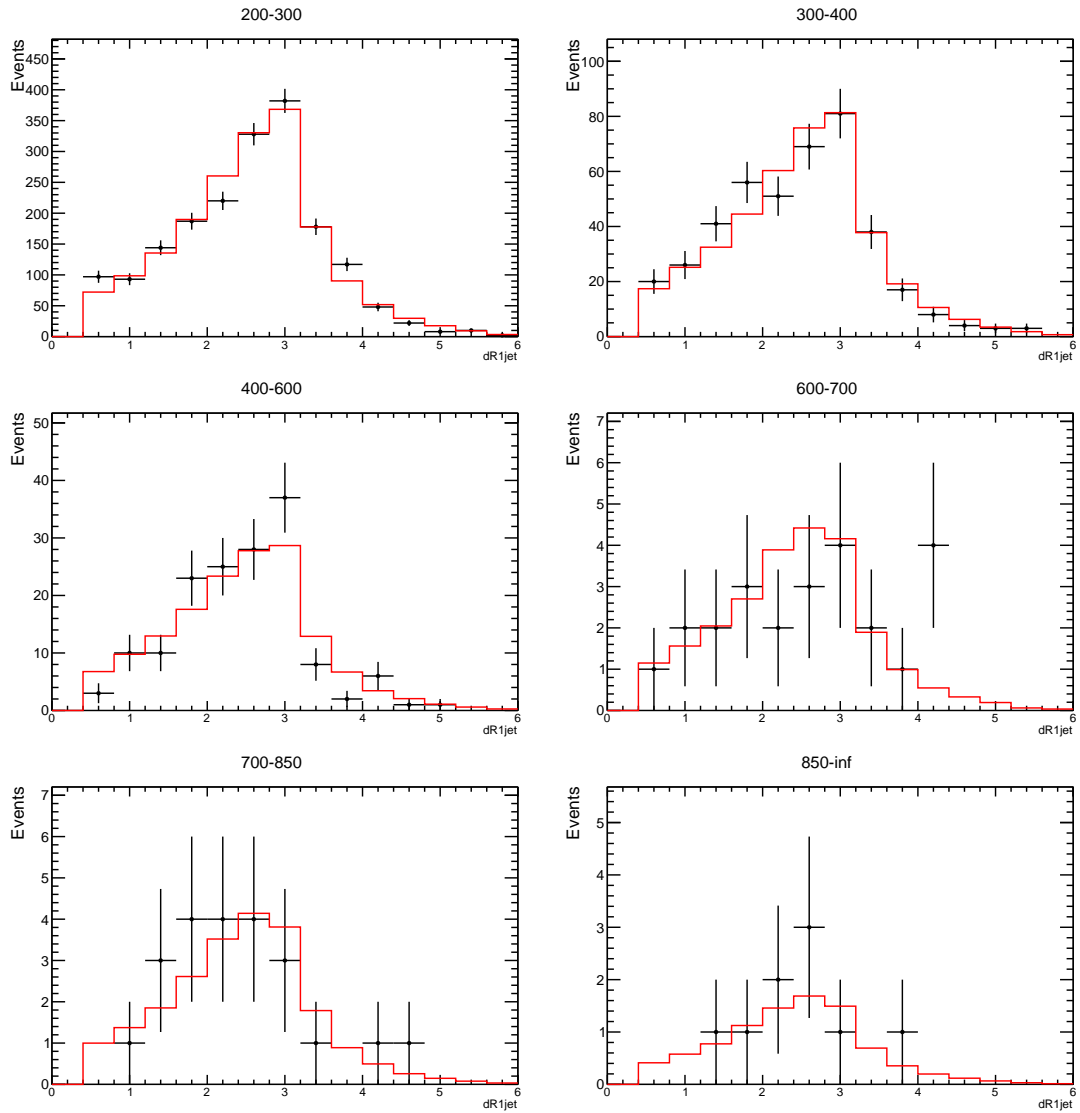
200 **2.2.6 Dphi**



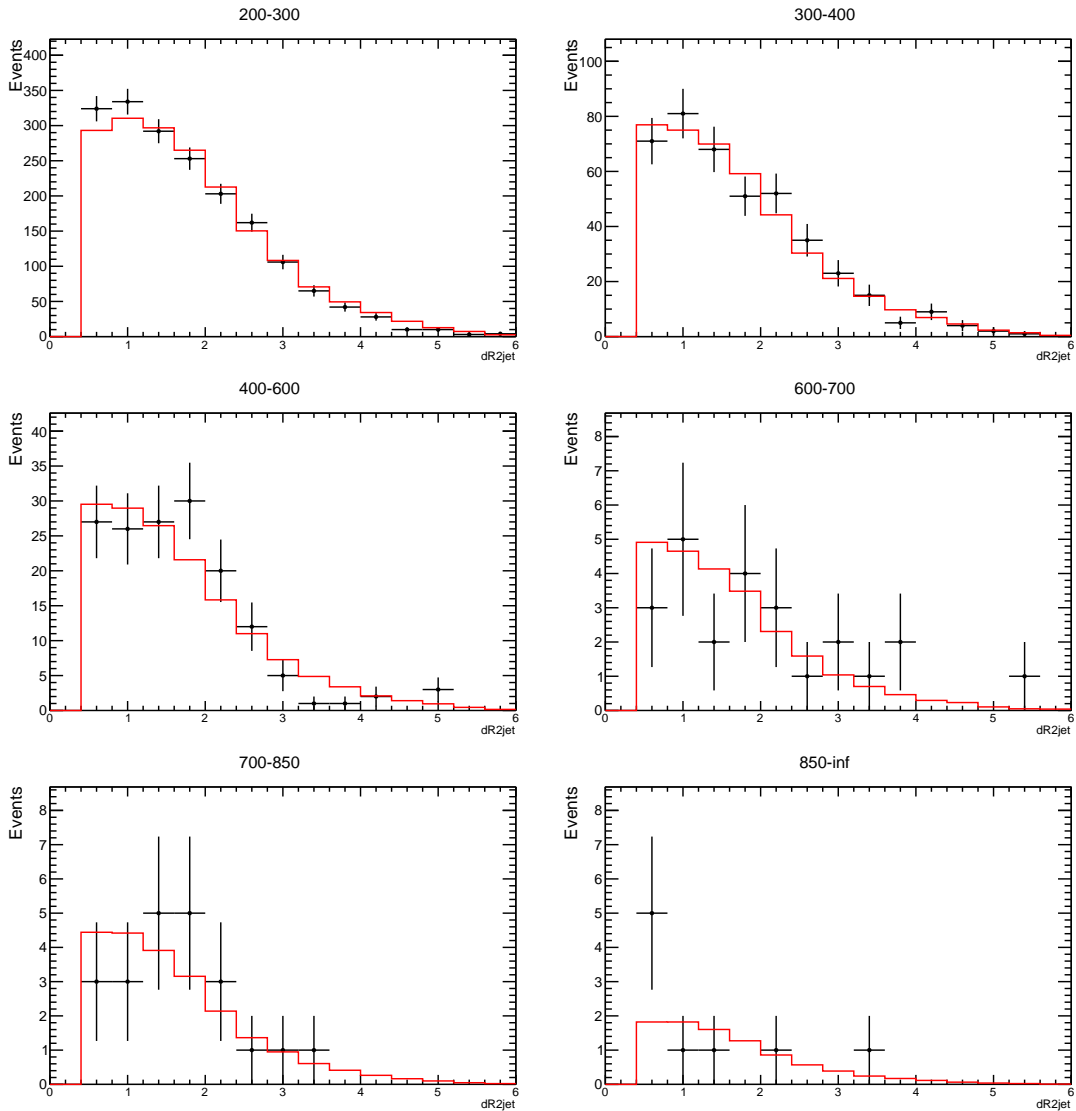
201 2.2.7 DR



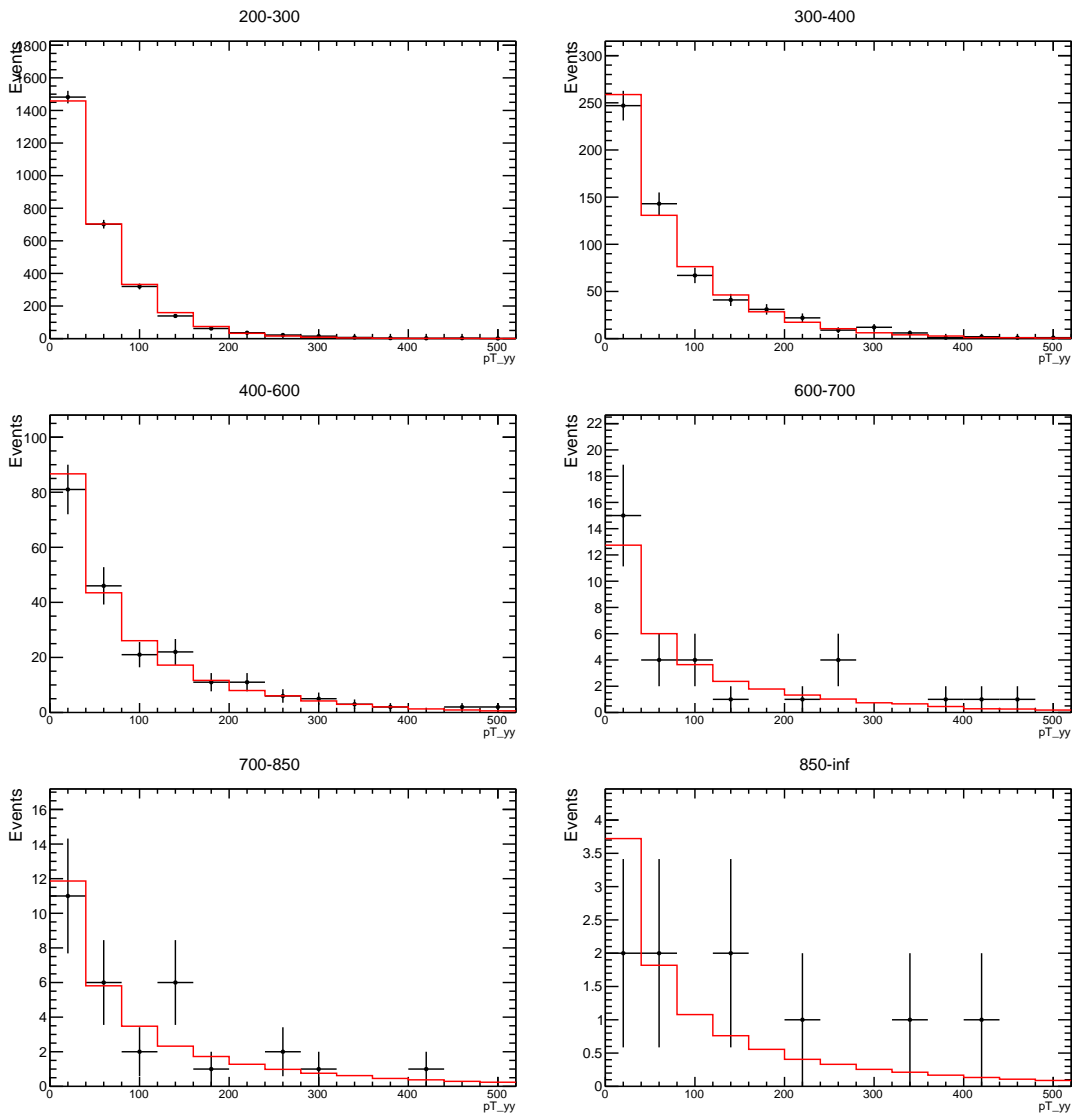
## 202 2.2.8 DR1jet



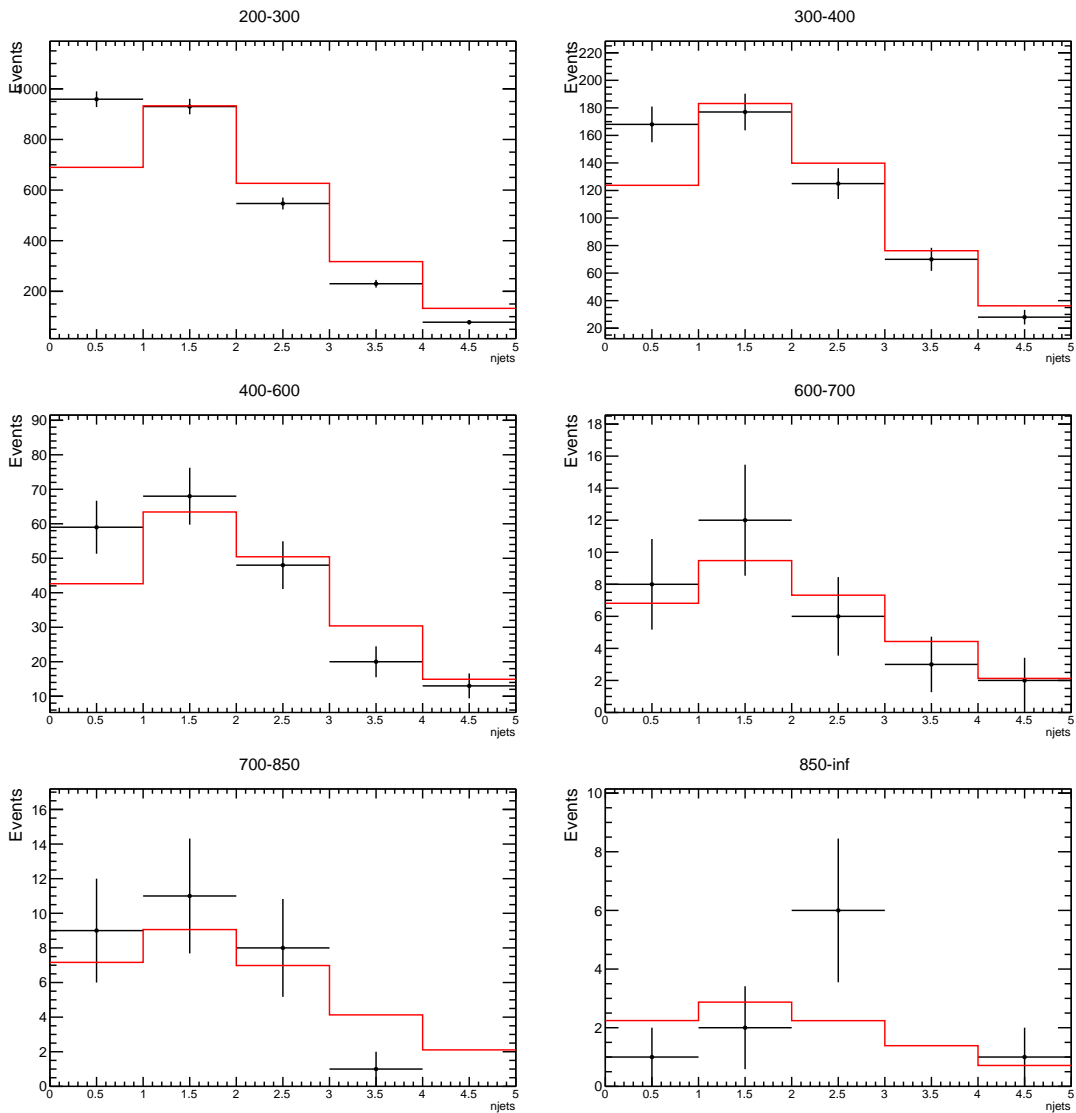
203 2.2.9 DR2jet



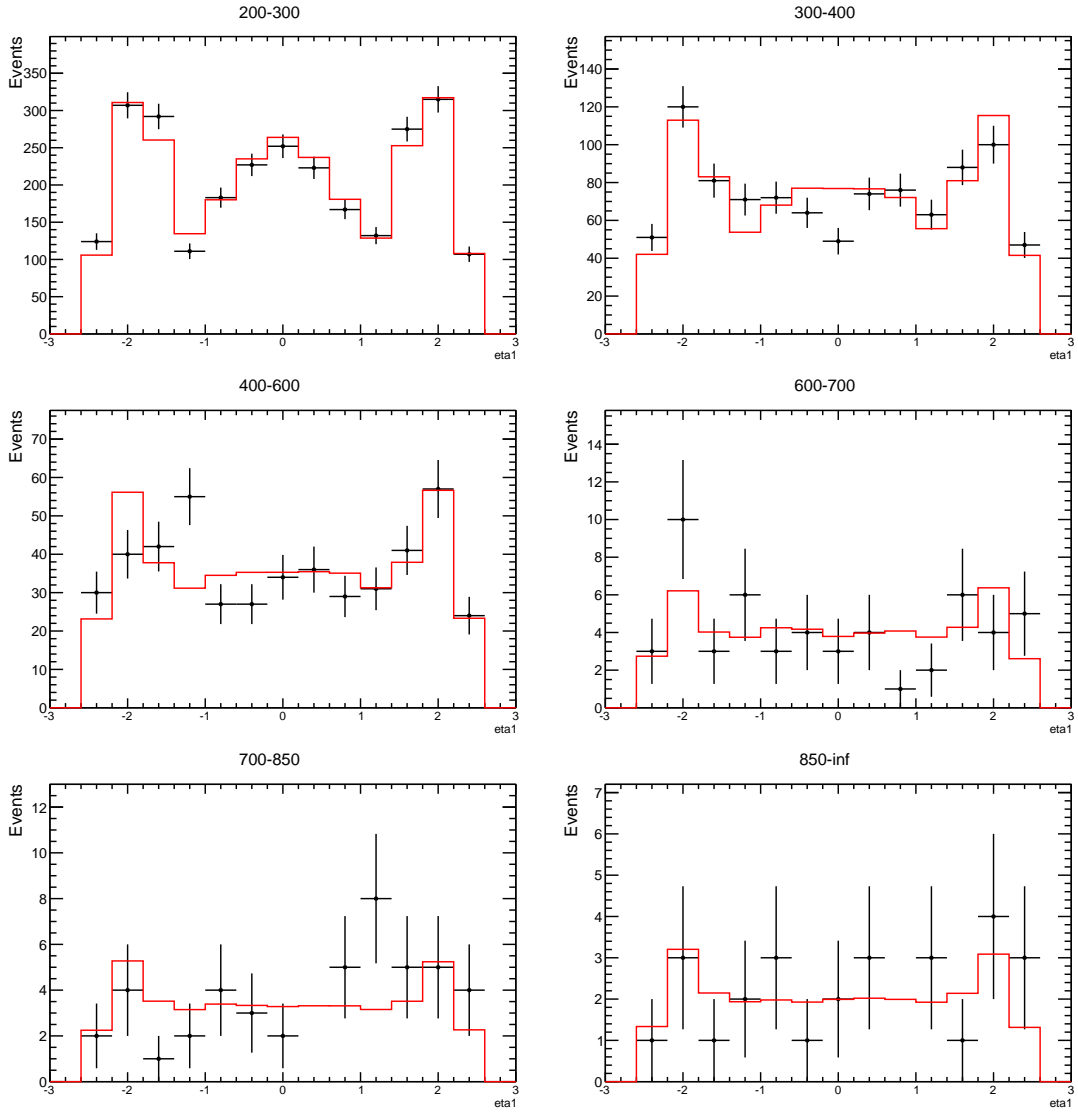
204 2.2.10 ptyy



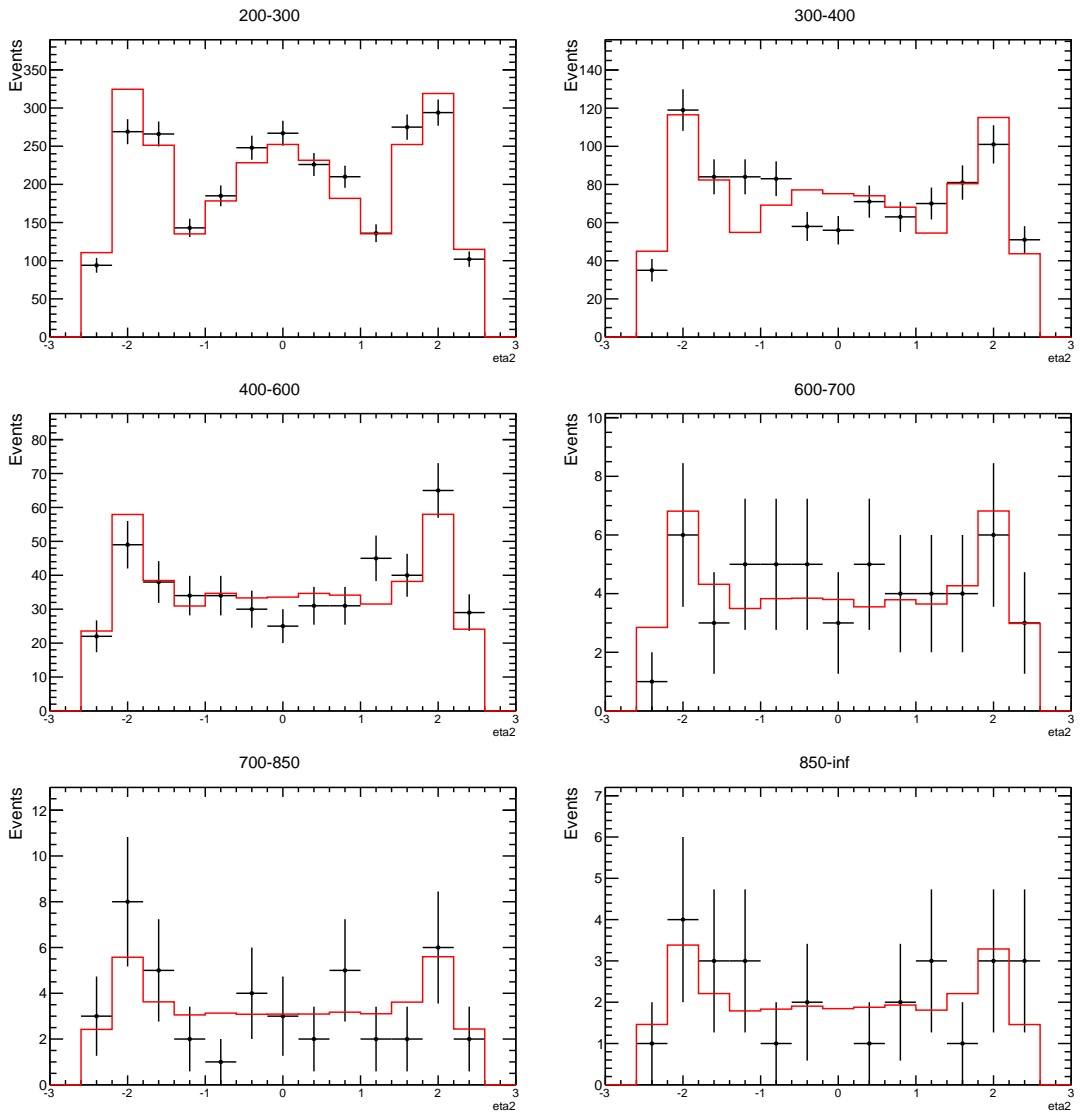
205 2.2.11 Njets



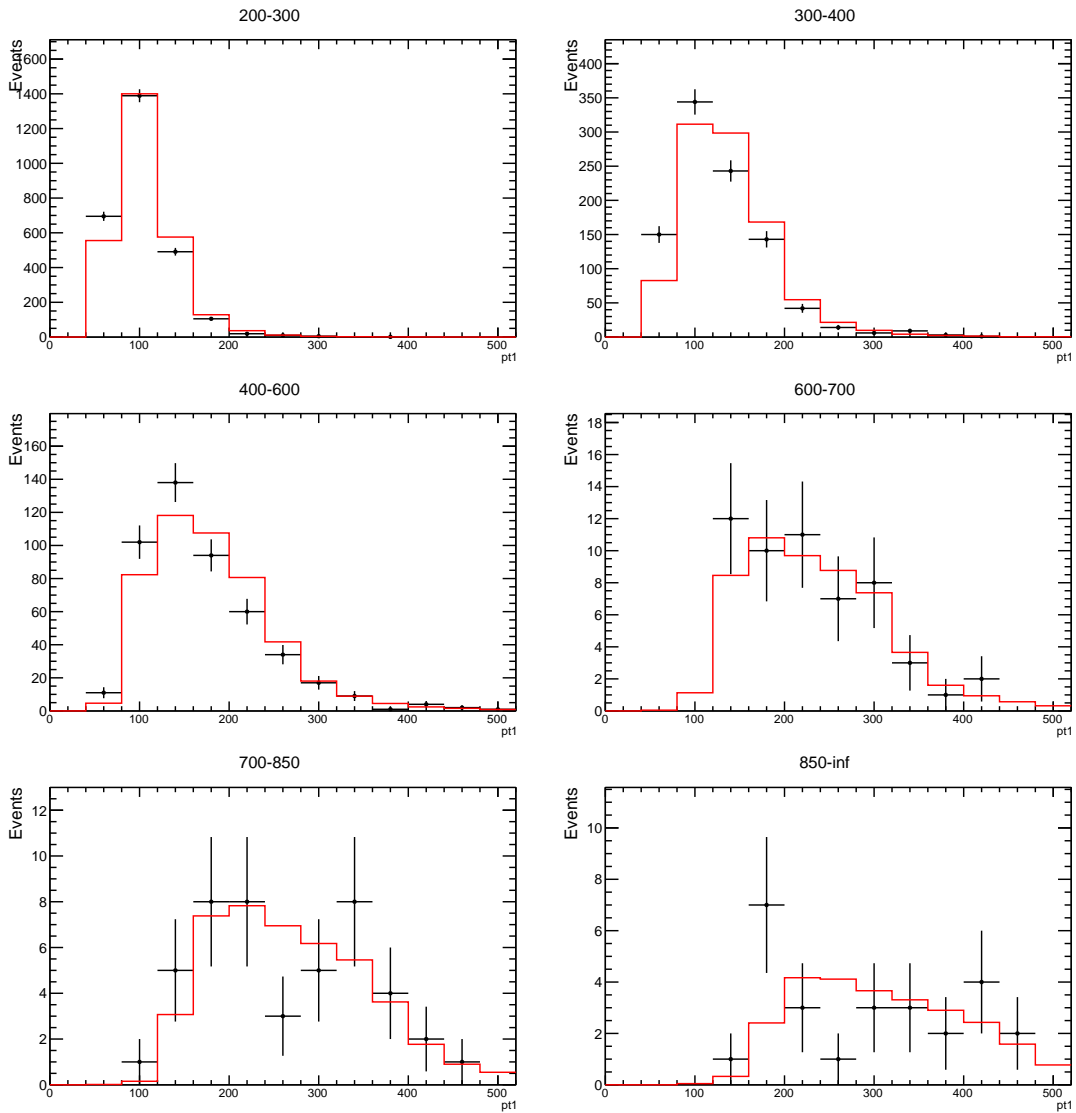


206 **2.3 BEEB**207 **2.3.1 Eta1**

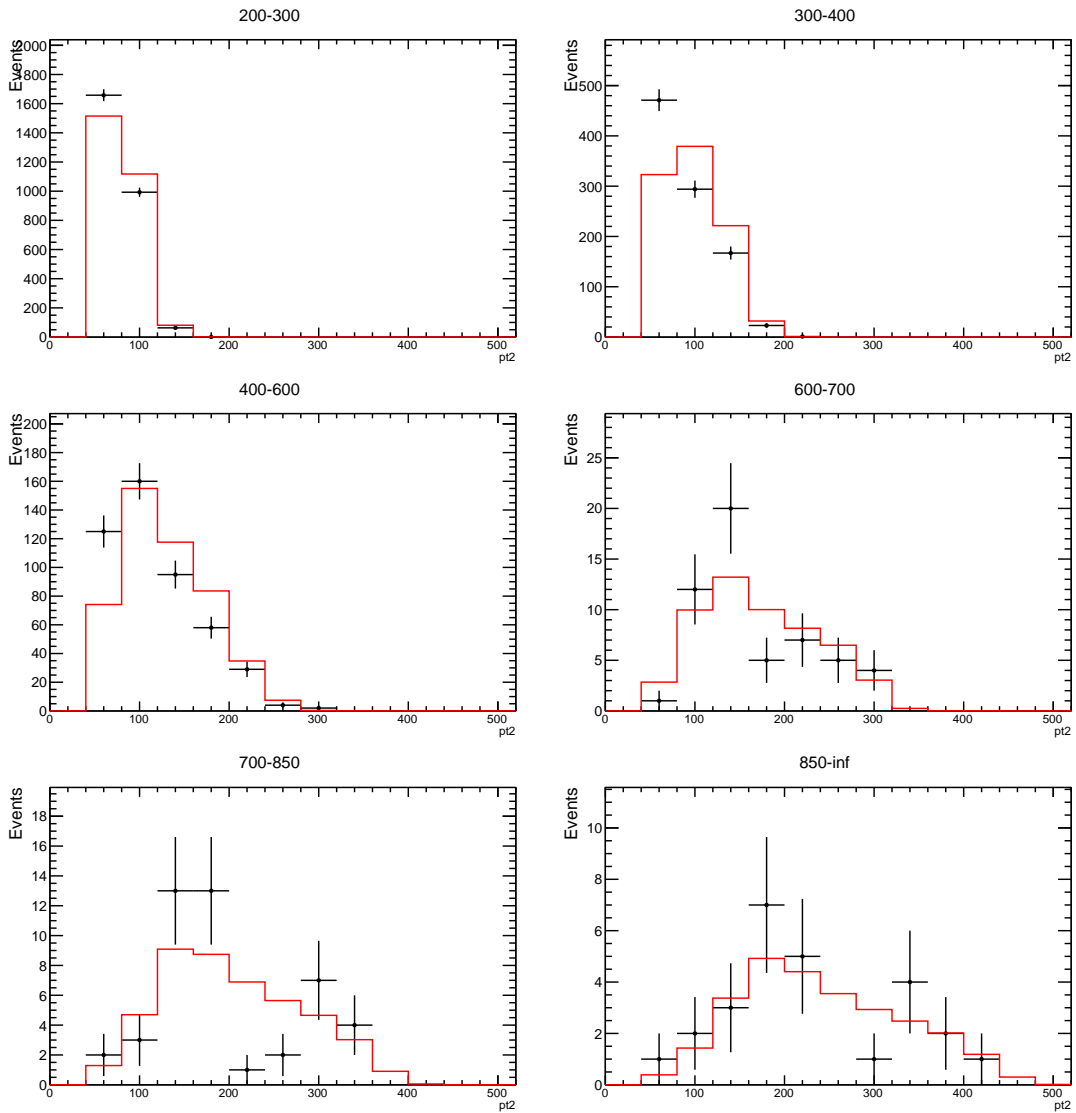
208 2.3.2 Eta2



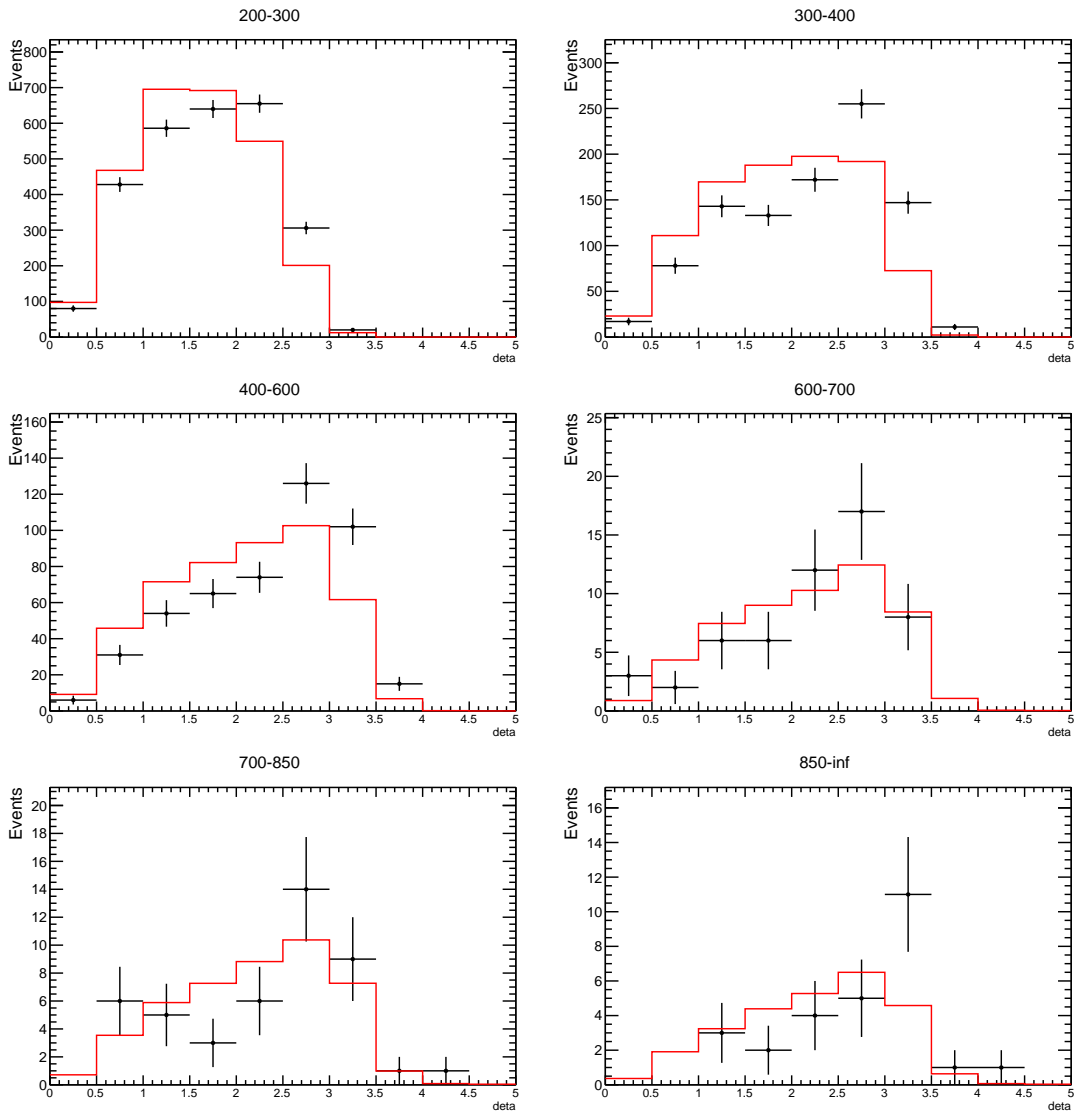
209 2.3.3 Pt1



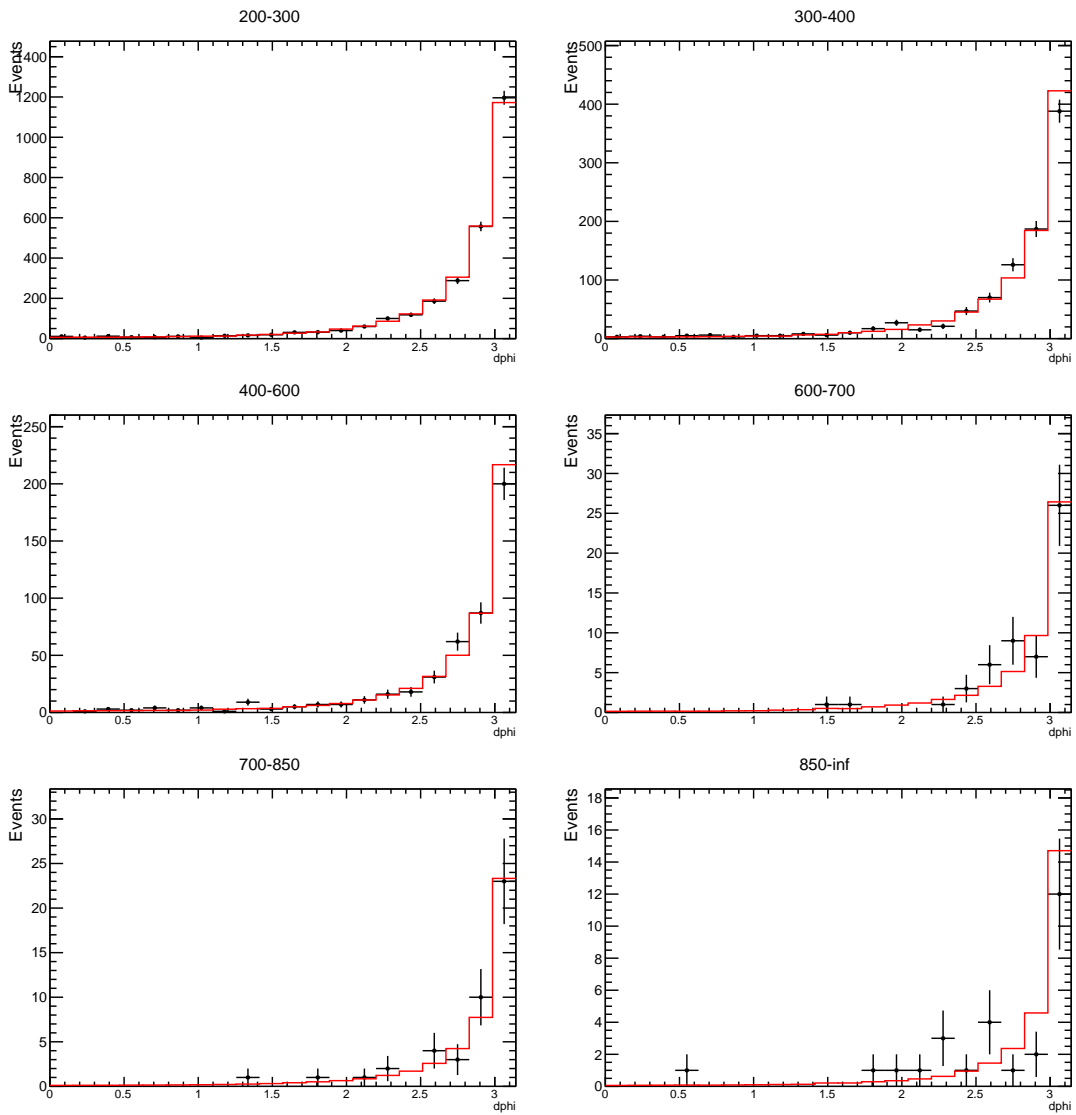
210 2.3.4 Pt2



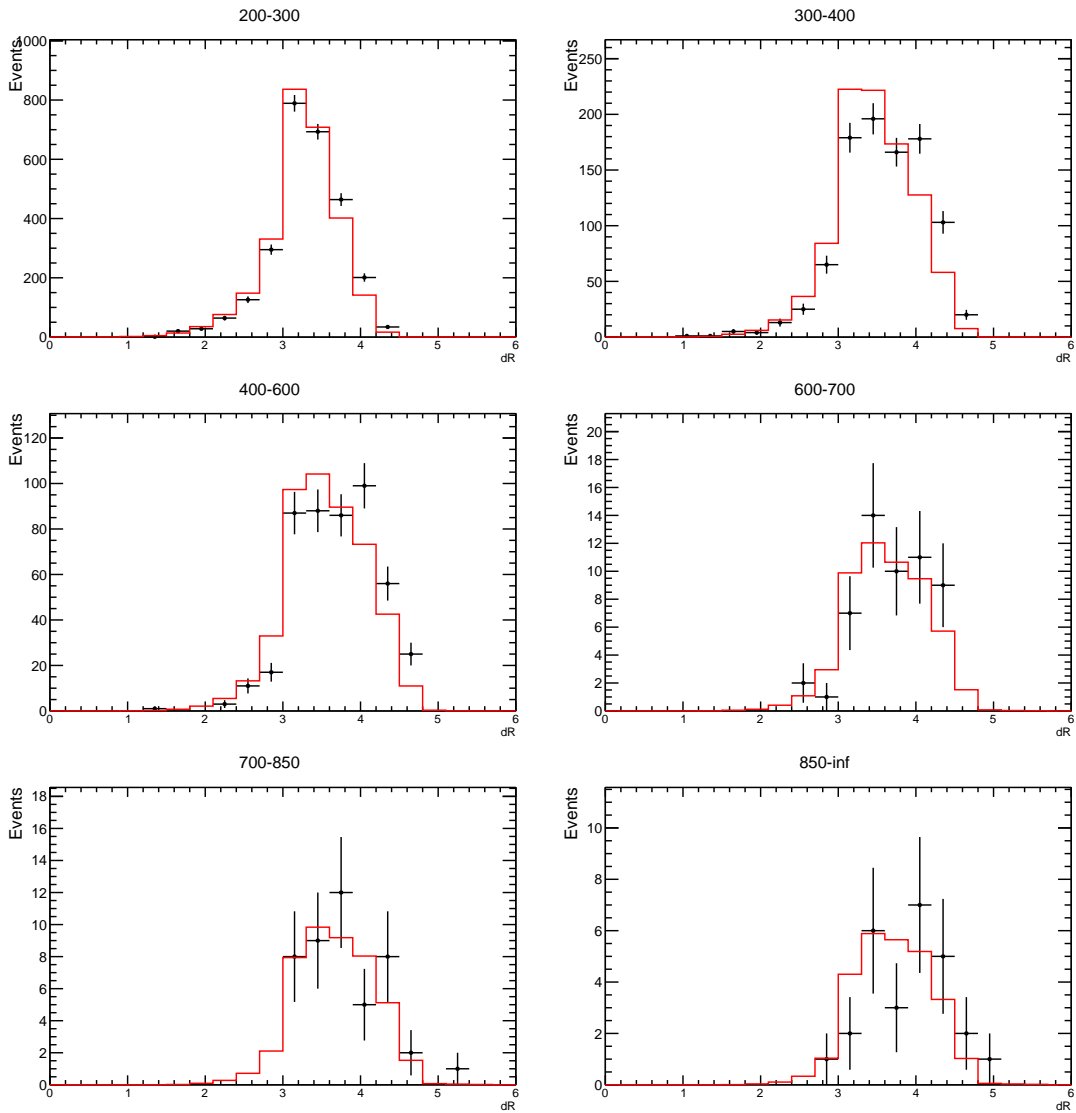
211 2.3.5 Deta



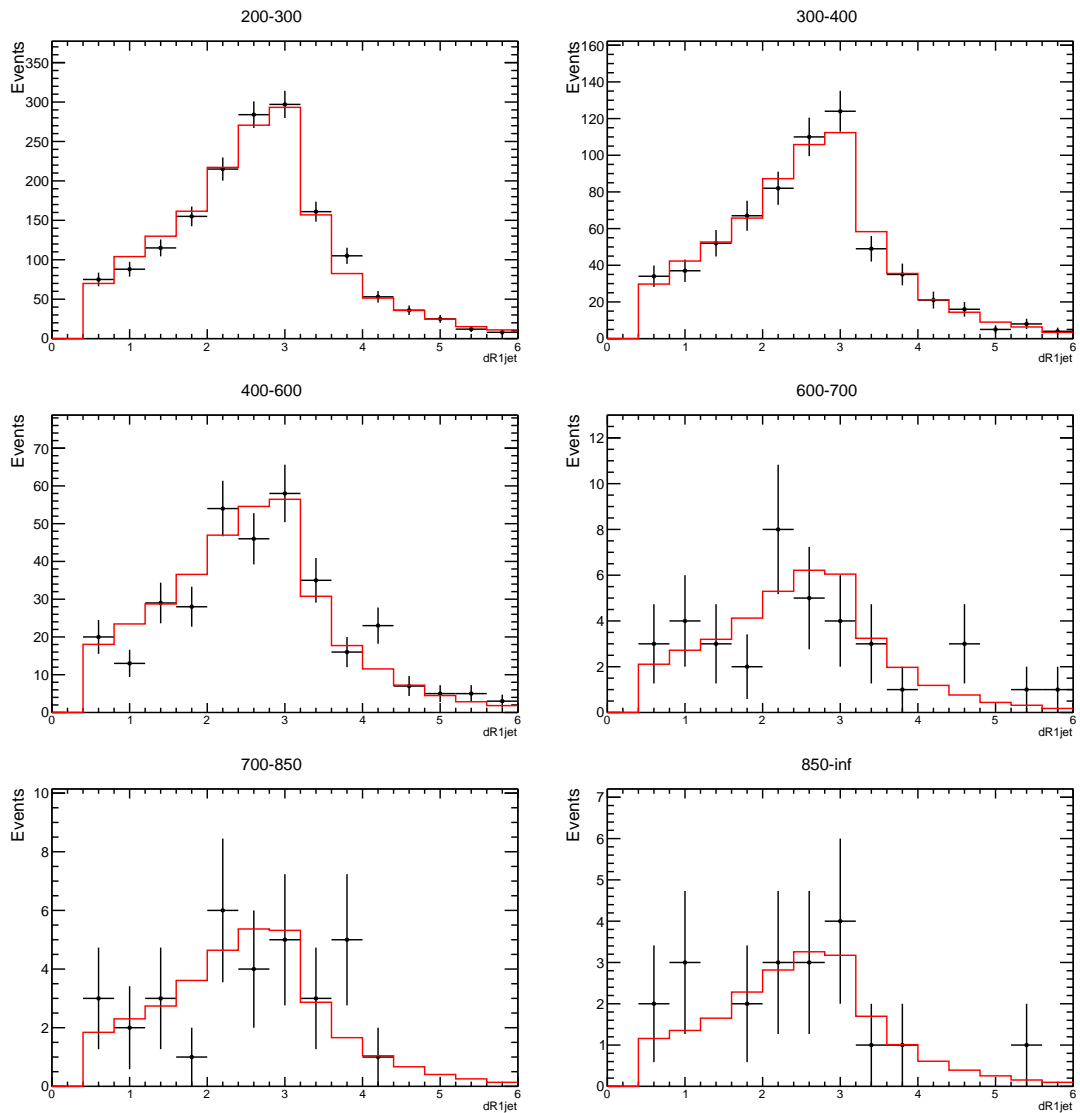
212 2.3.6 Dphi



213 2.3.7 DR

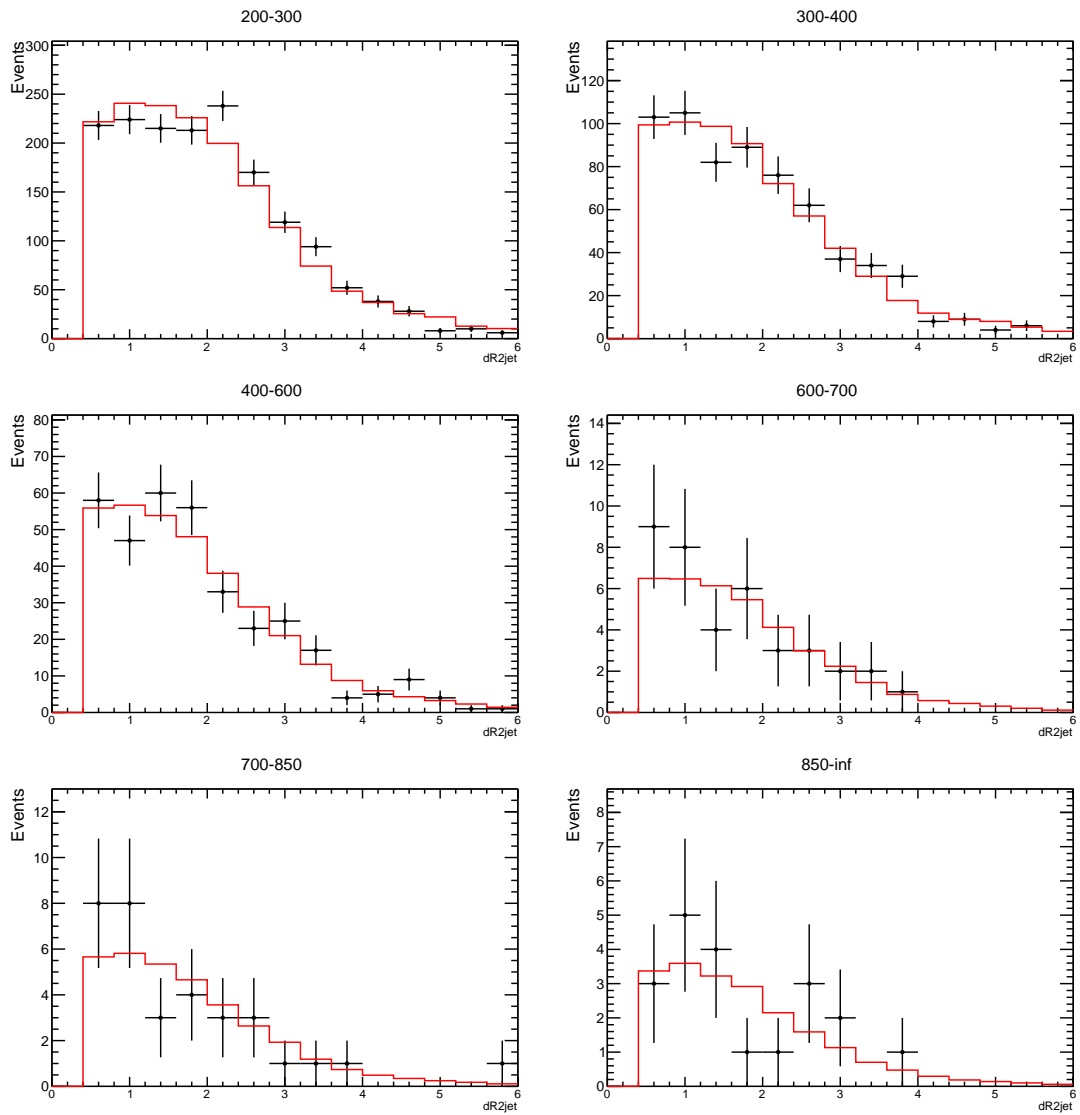


## 214 2.3.8 DR1jet

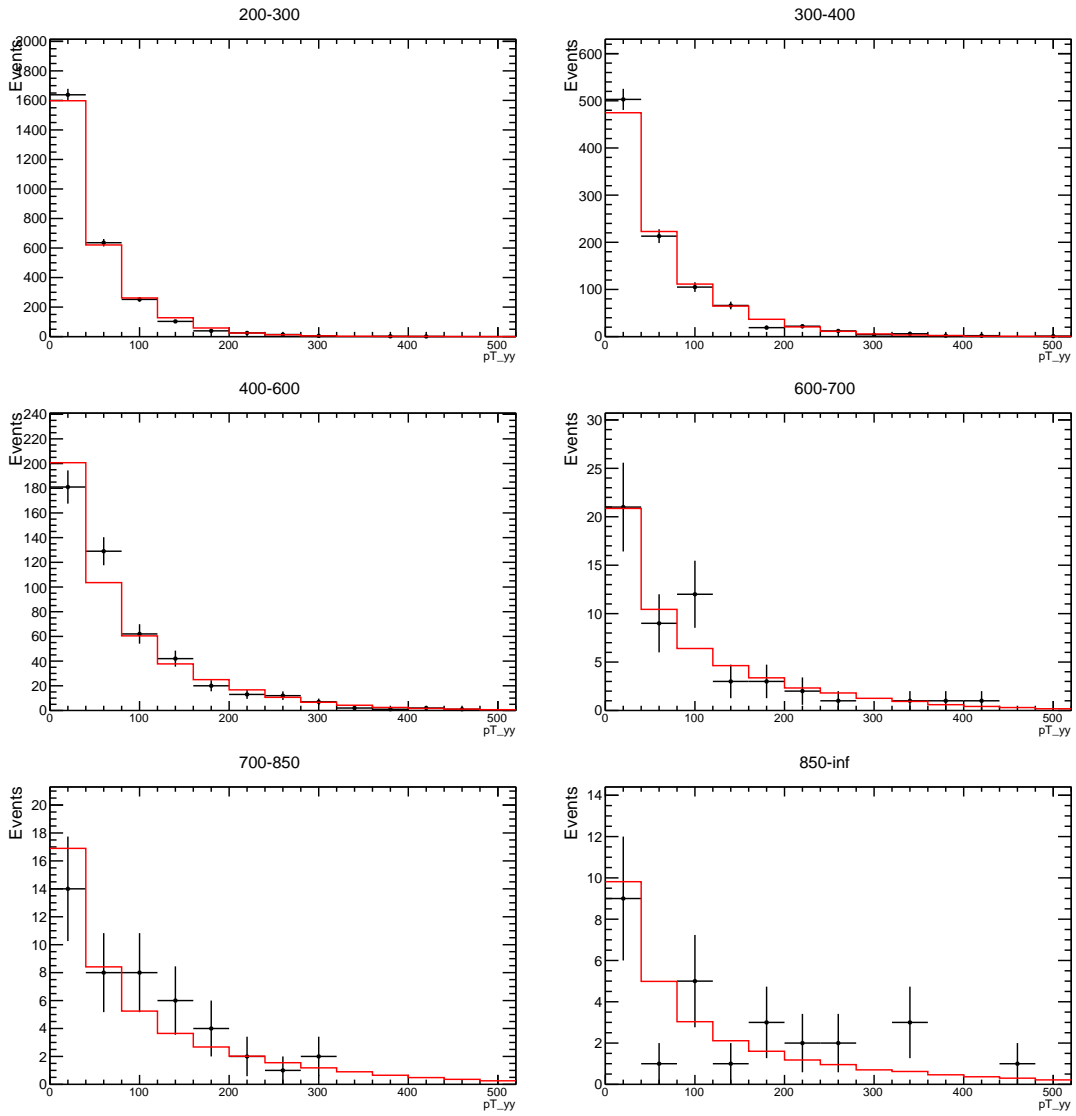




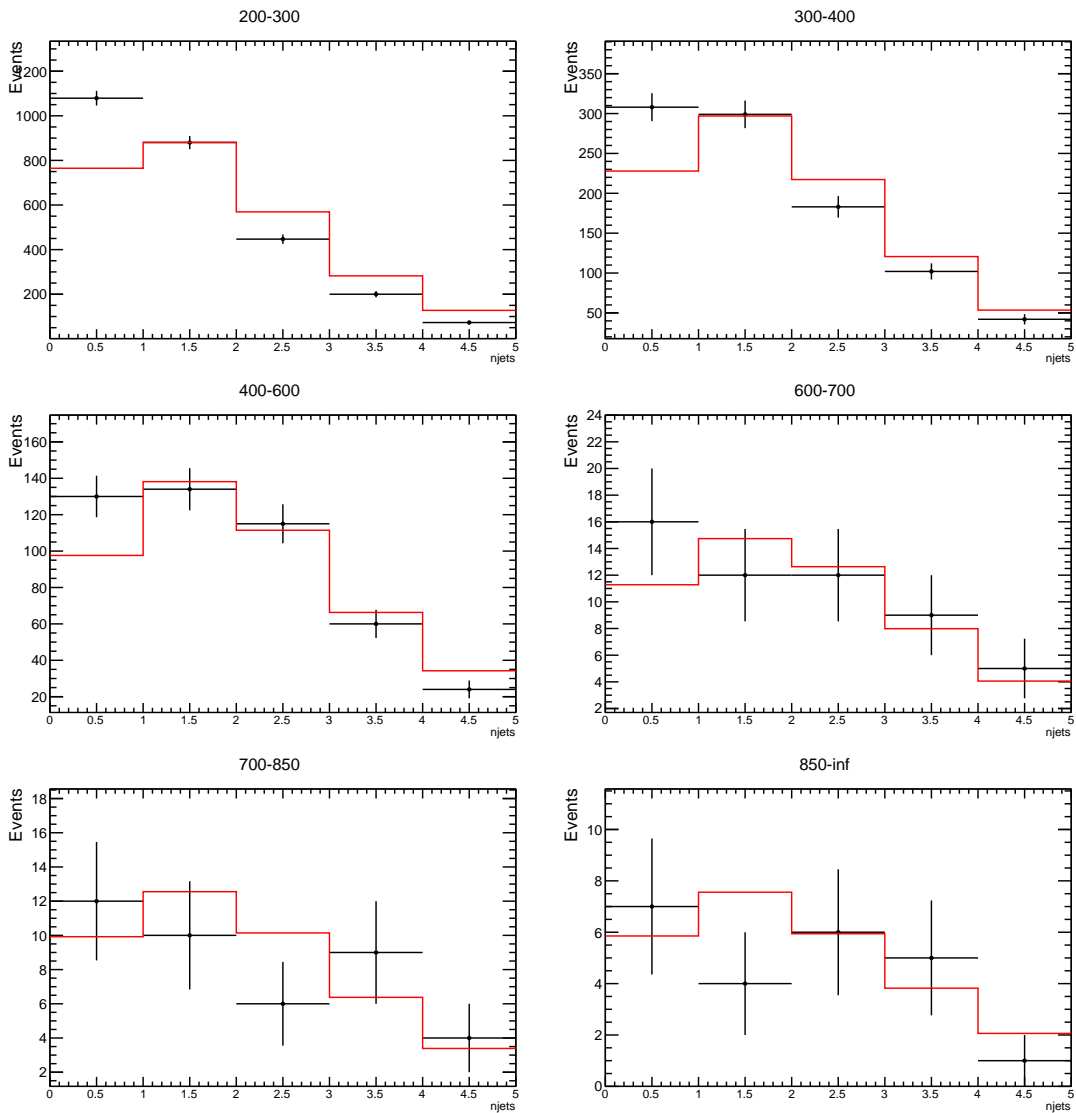
## 215 2.3.9 DR2jet



216 2.3.10 ptyy

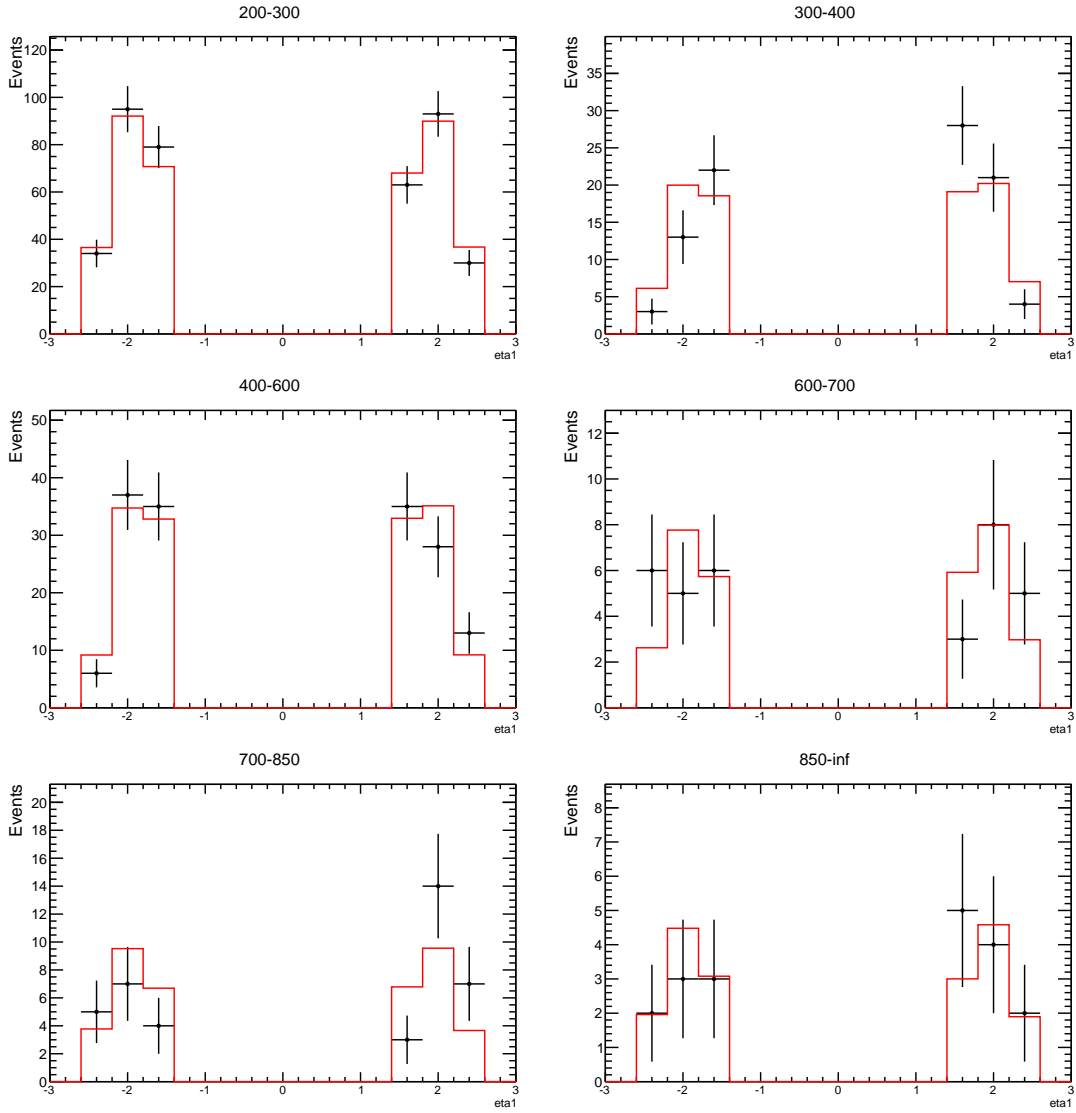


217 **2.3.11 Njets**

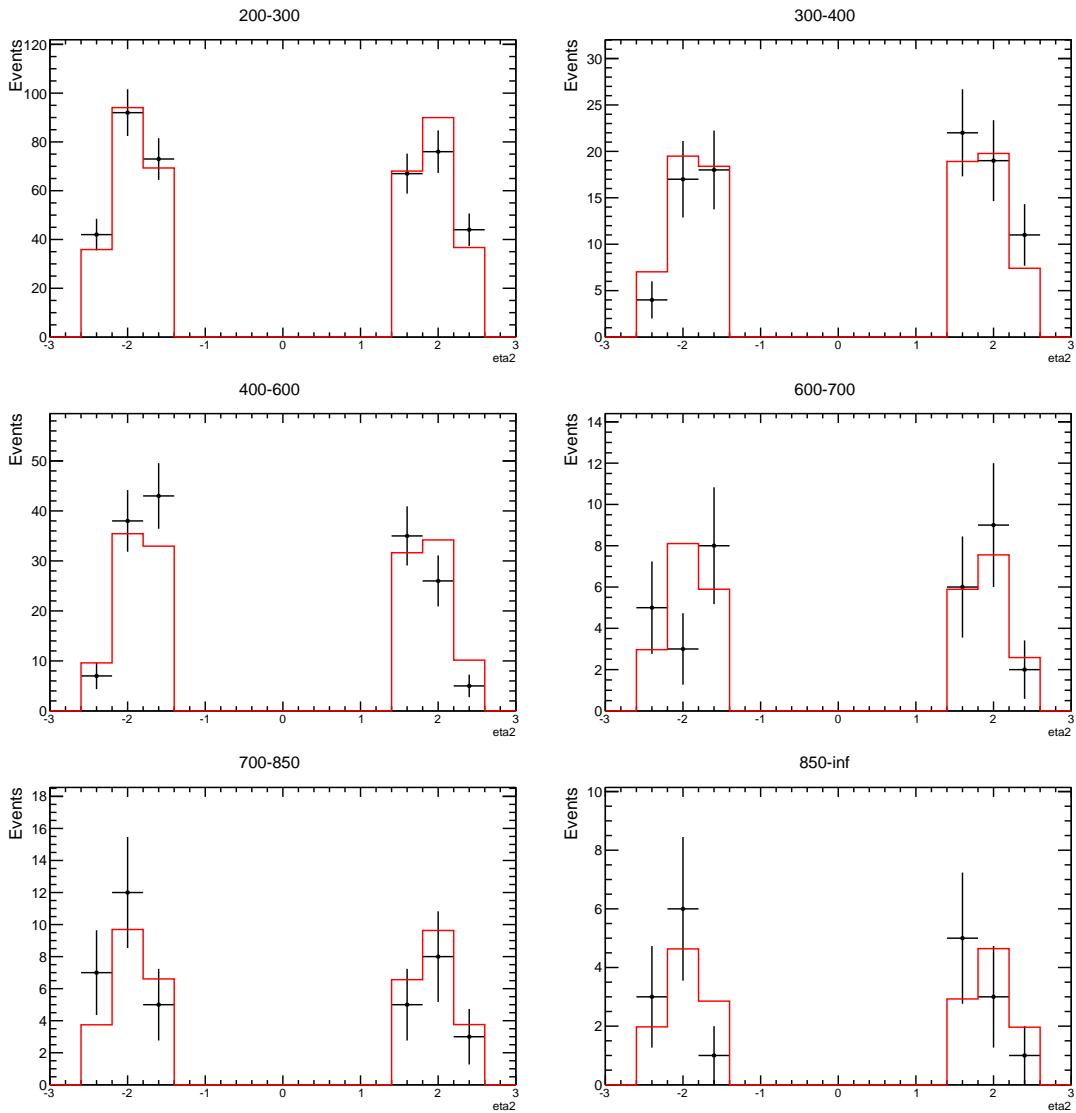


218 **2.4 EE**

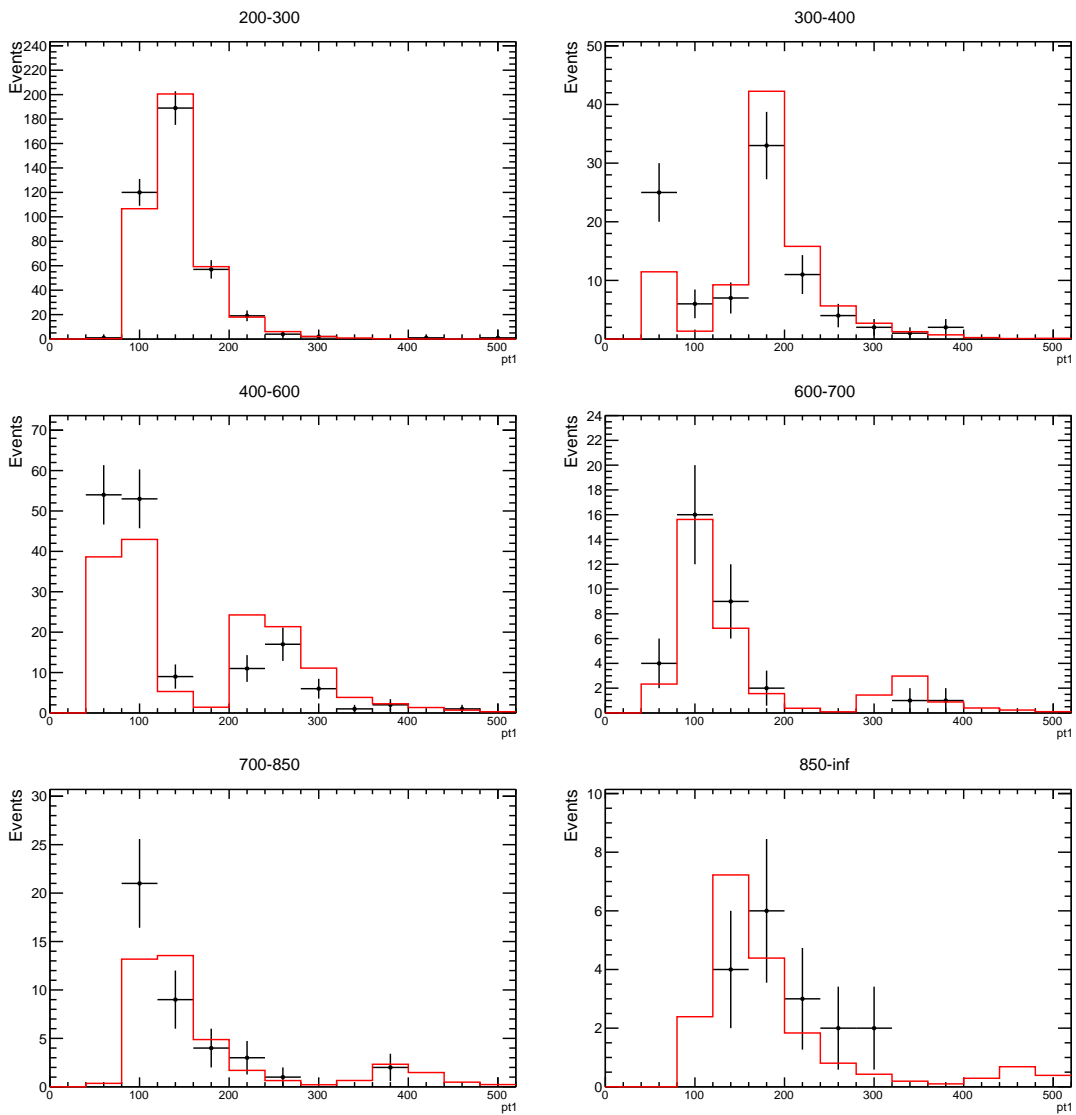
219 **2.4.1 Eta1**



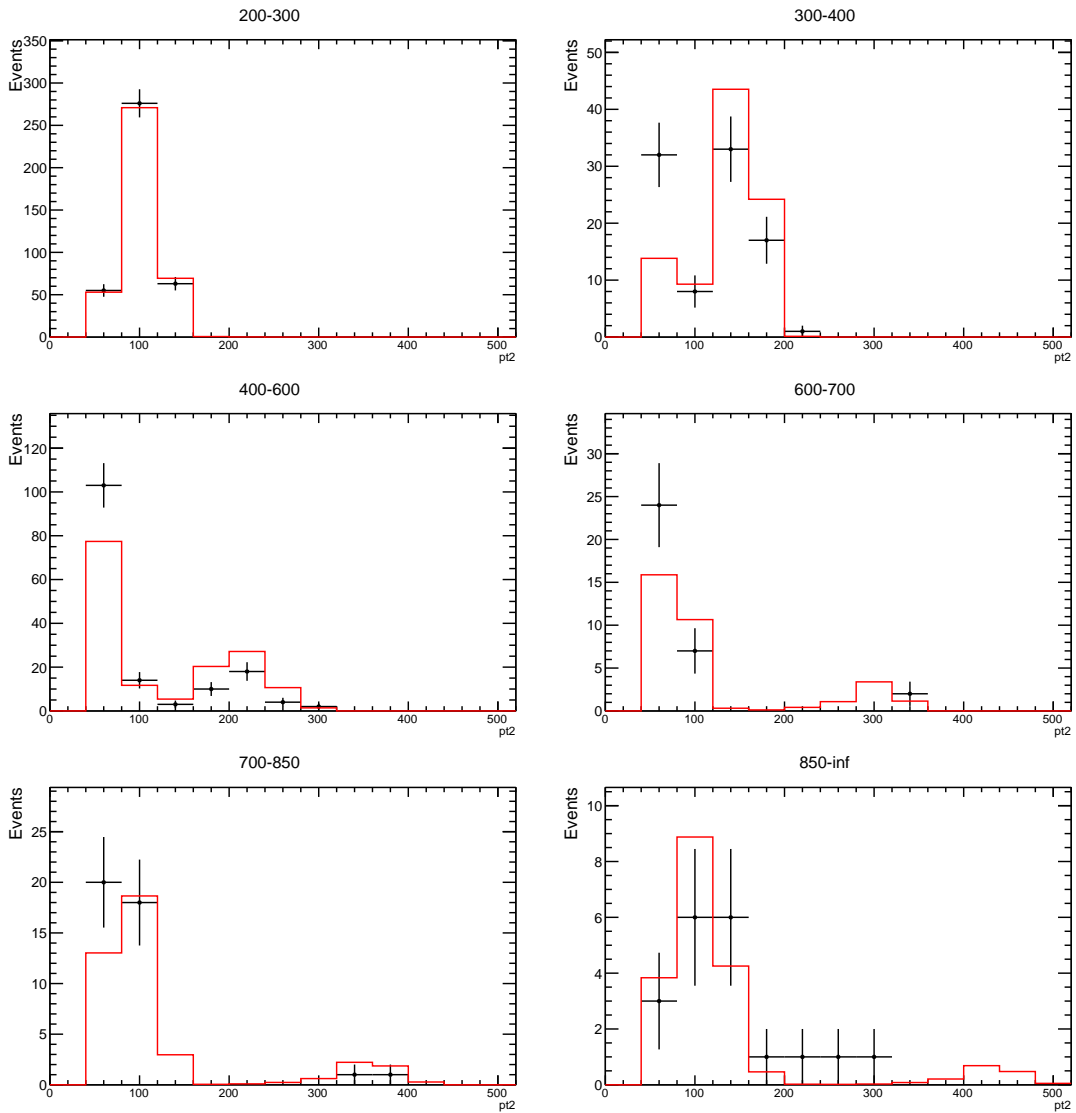
220 2.4.2 Eta2



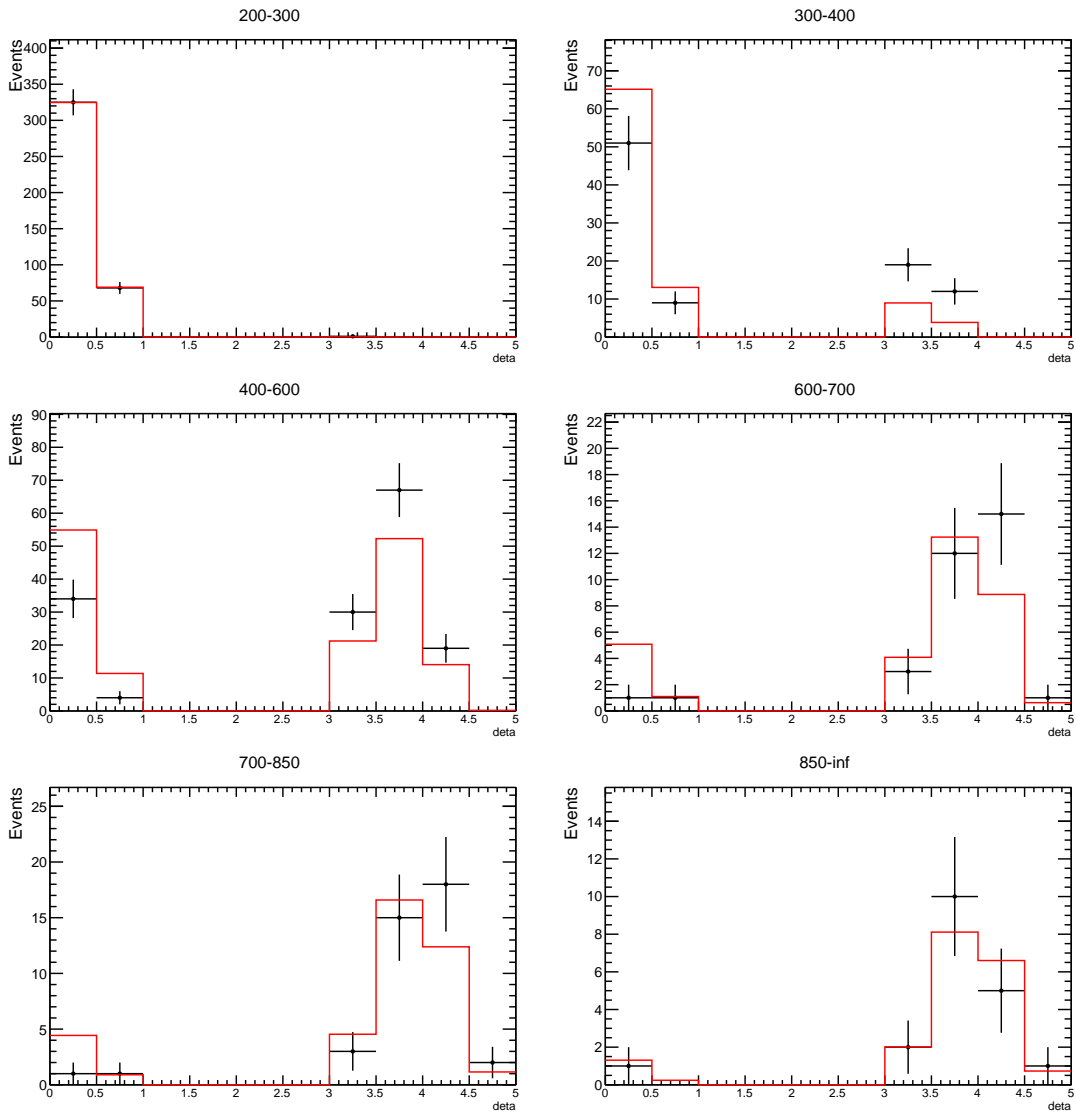
221 2.4.3 Pt1



222 2.4.4 Pt2

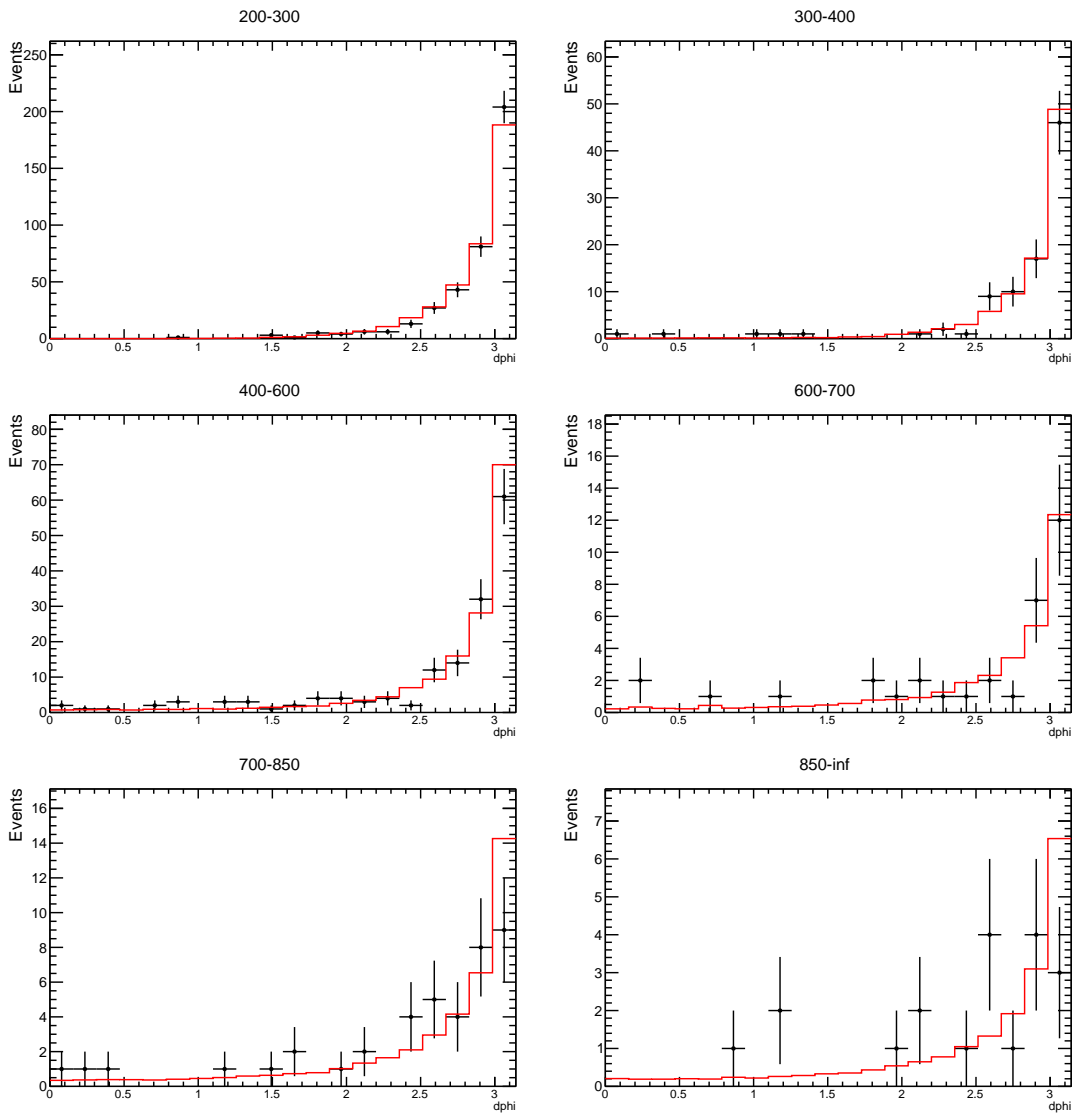


223 **2.4.5 Deta**

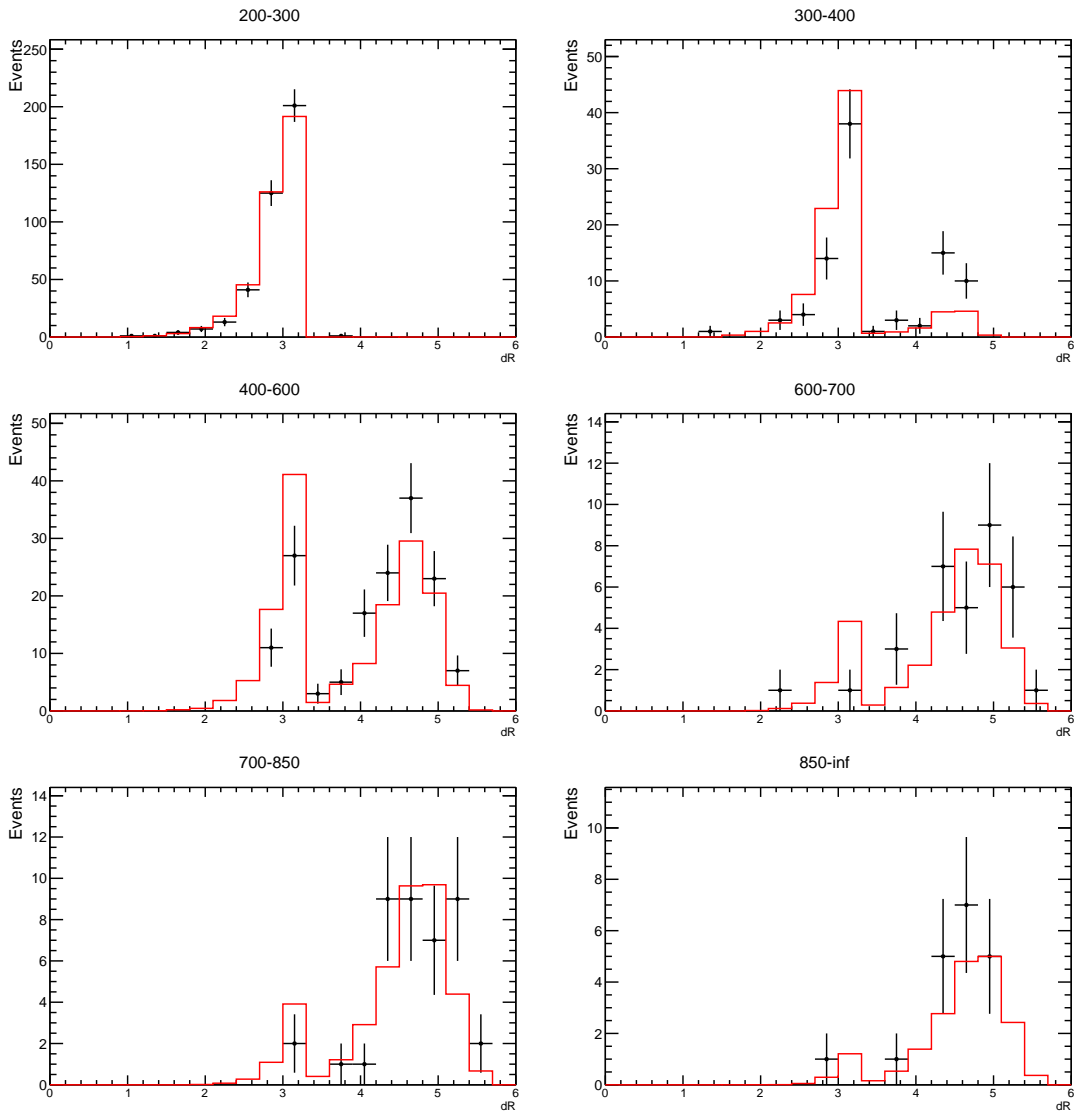




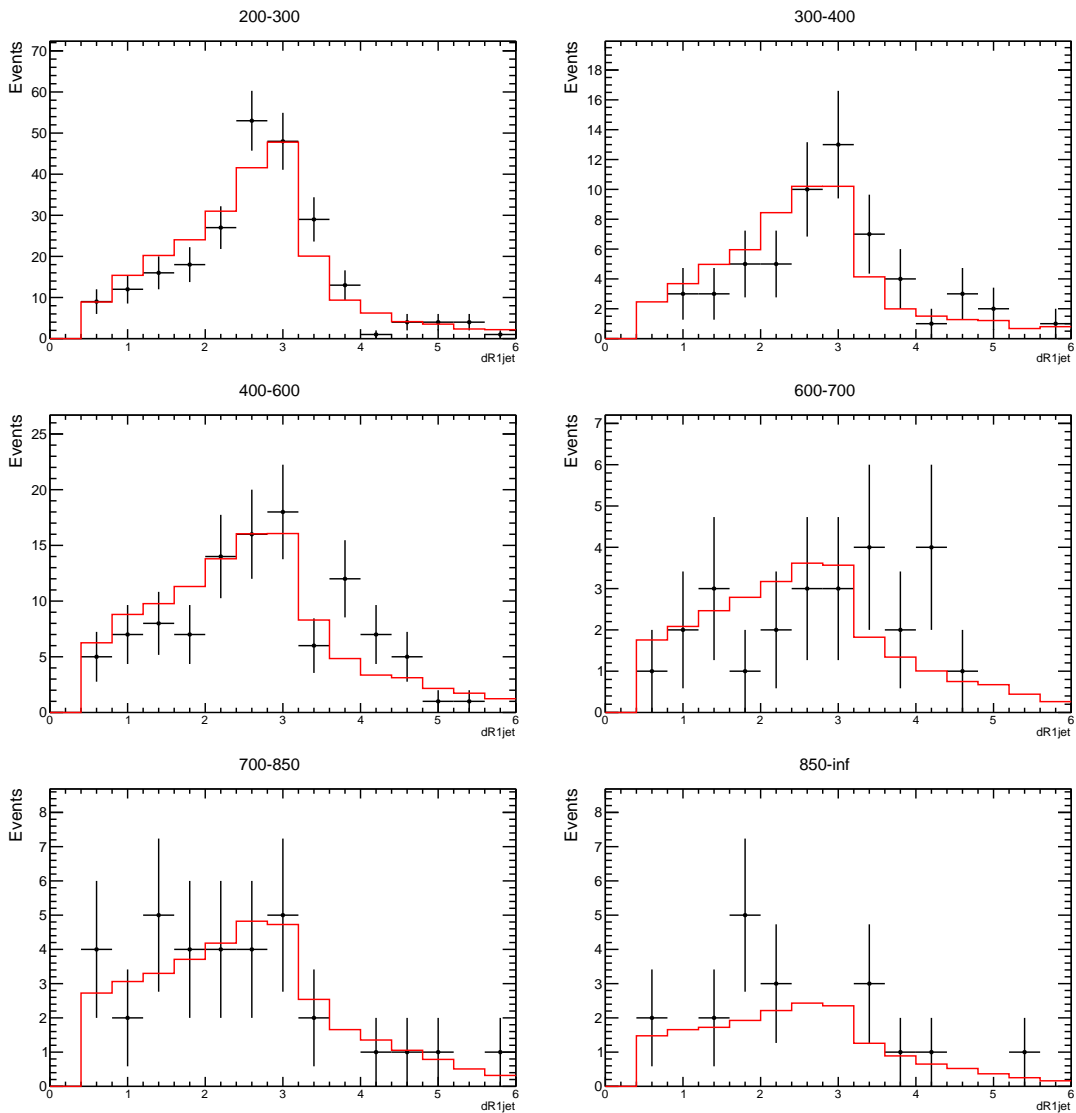
224 2.4.6 Dphi



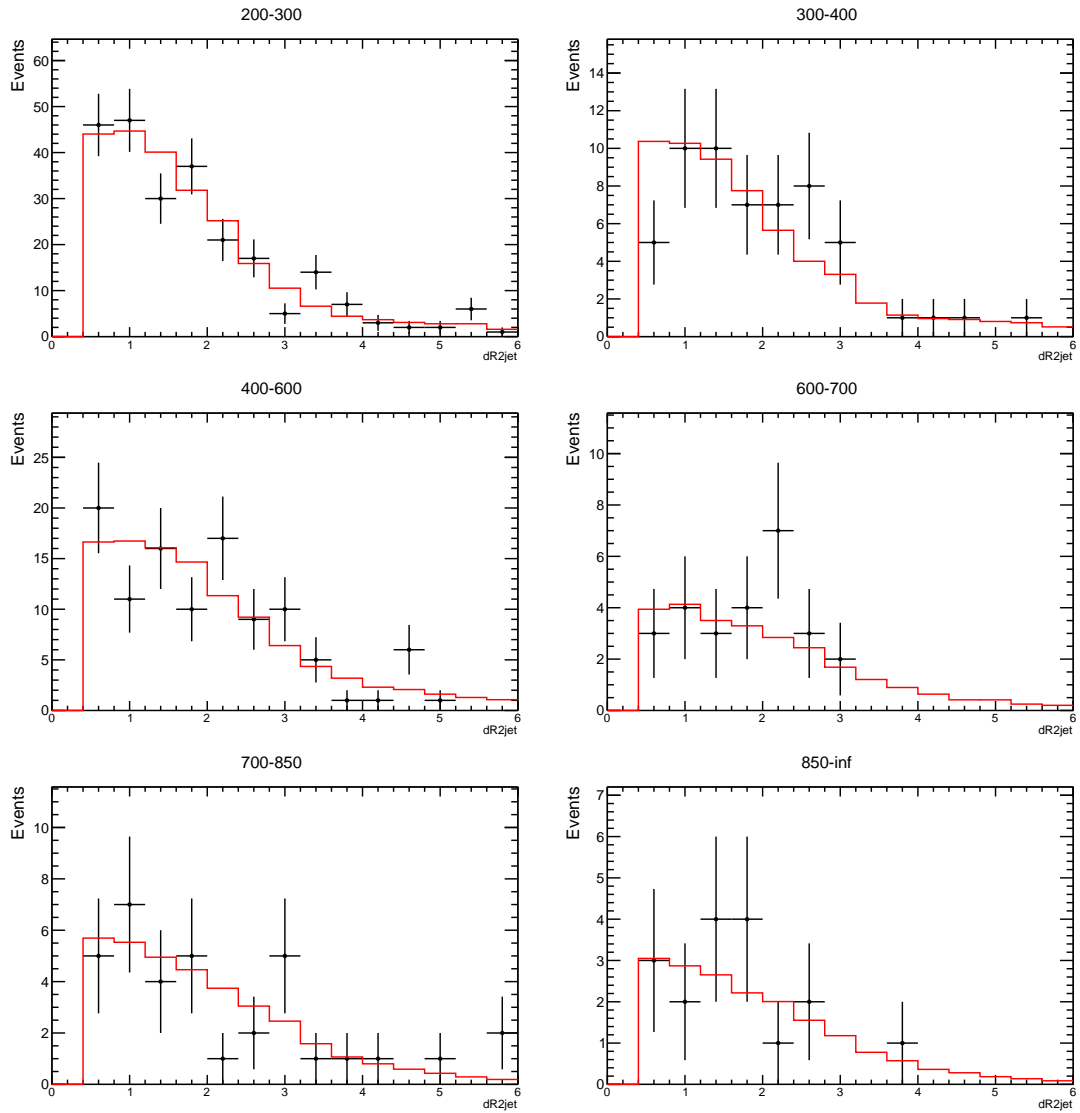
225 2.4.7 DR



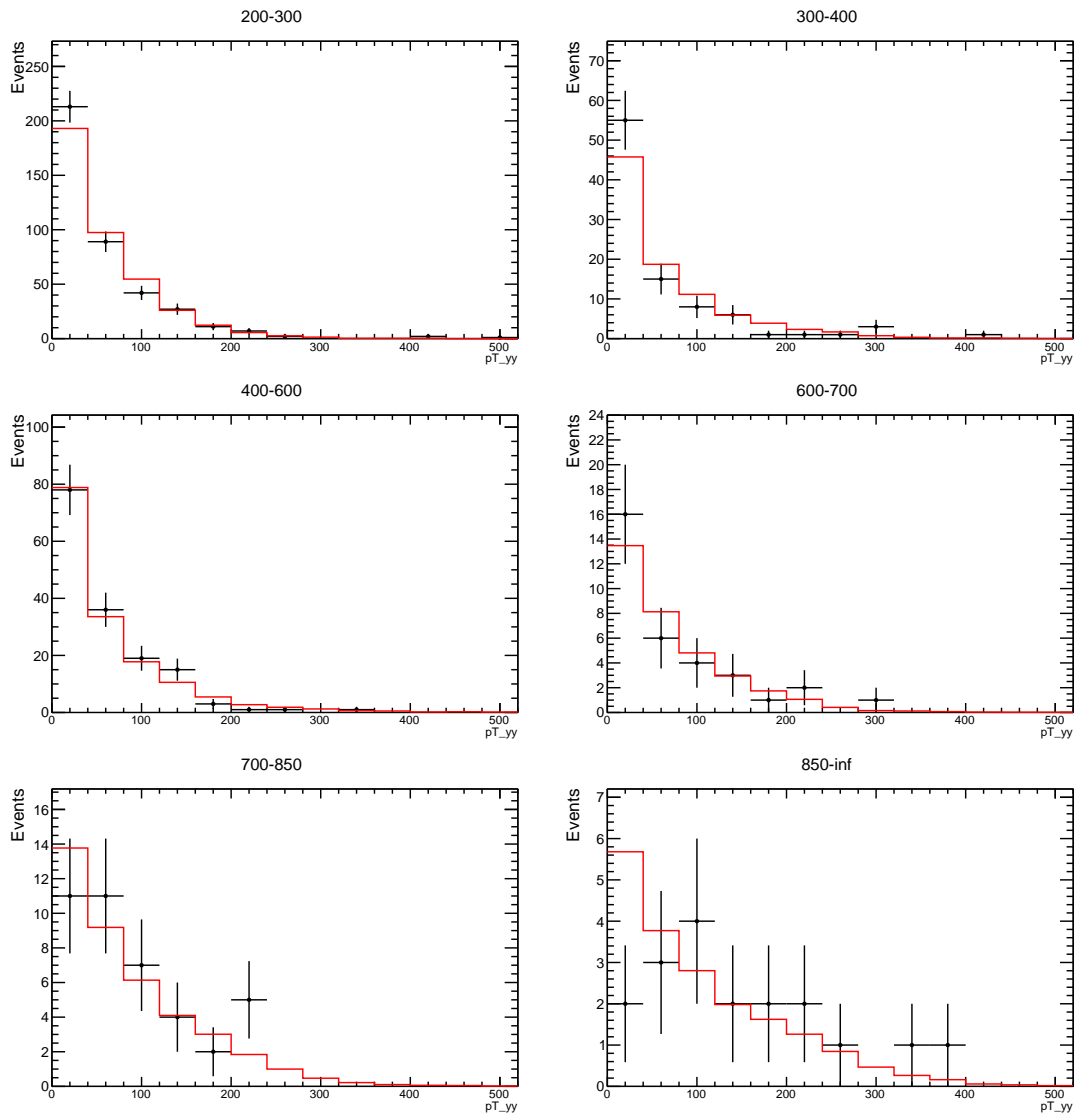
226 2.4.8 DR1jet



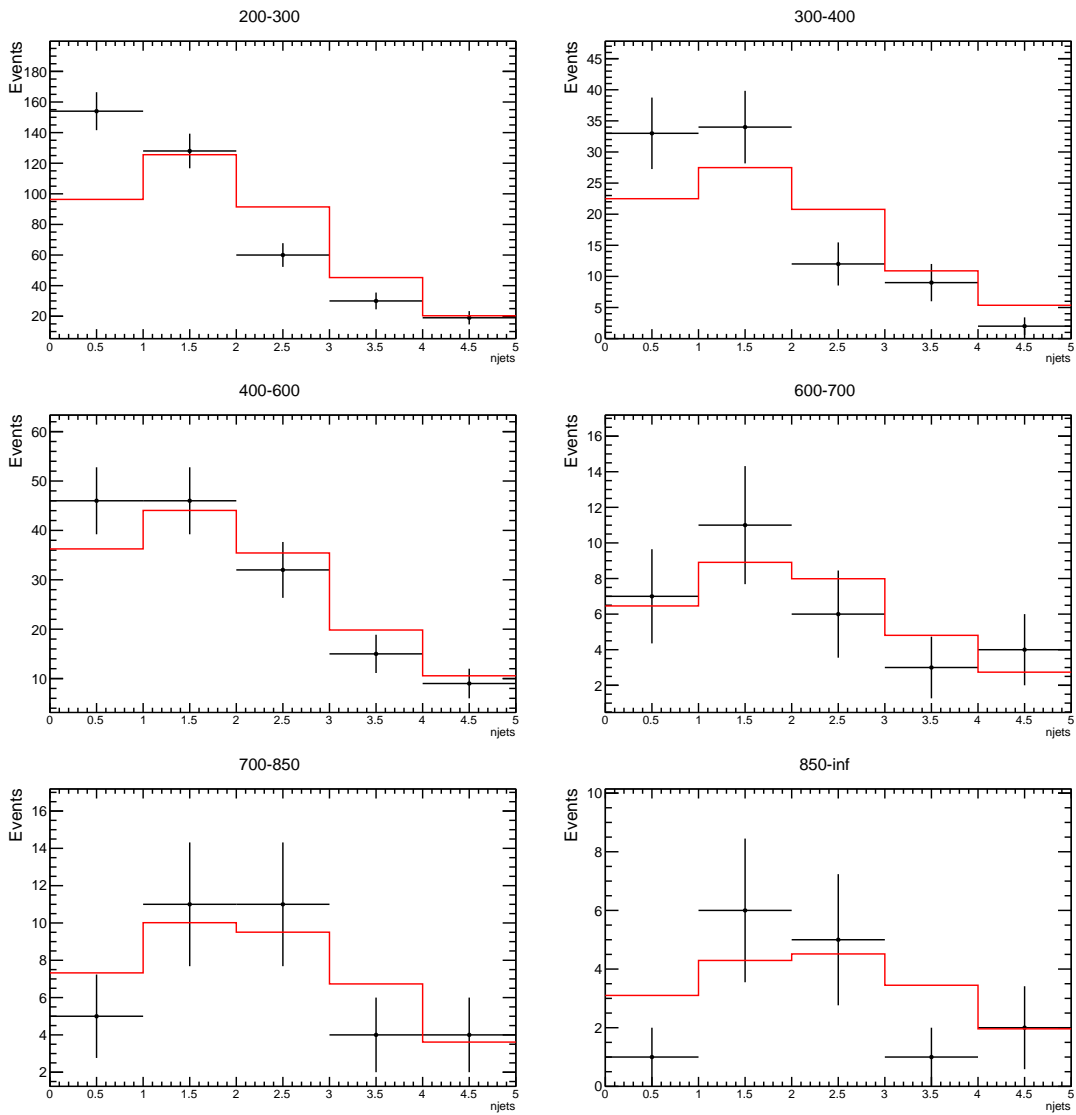
## 227 2.4.9 DR2jet

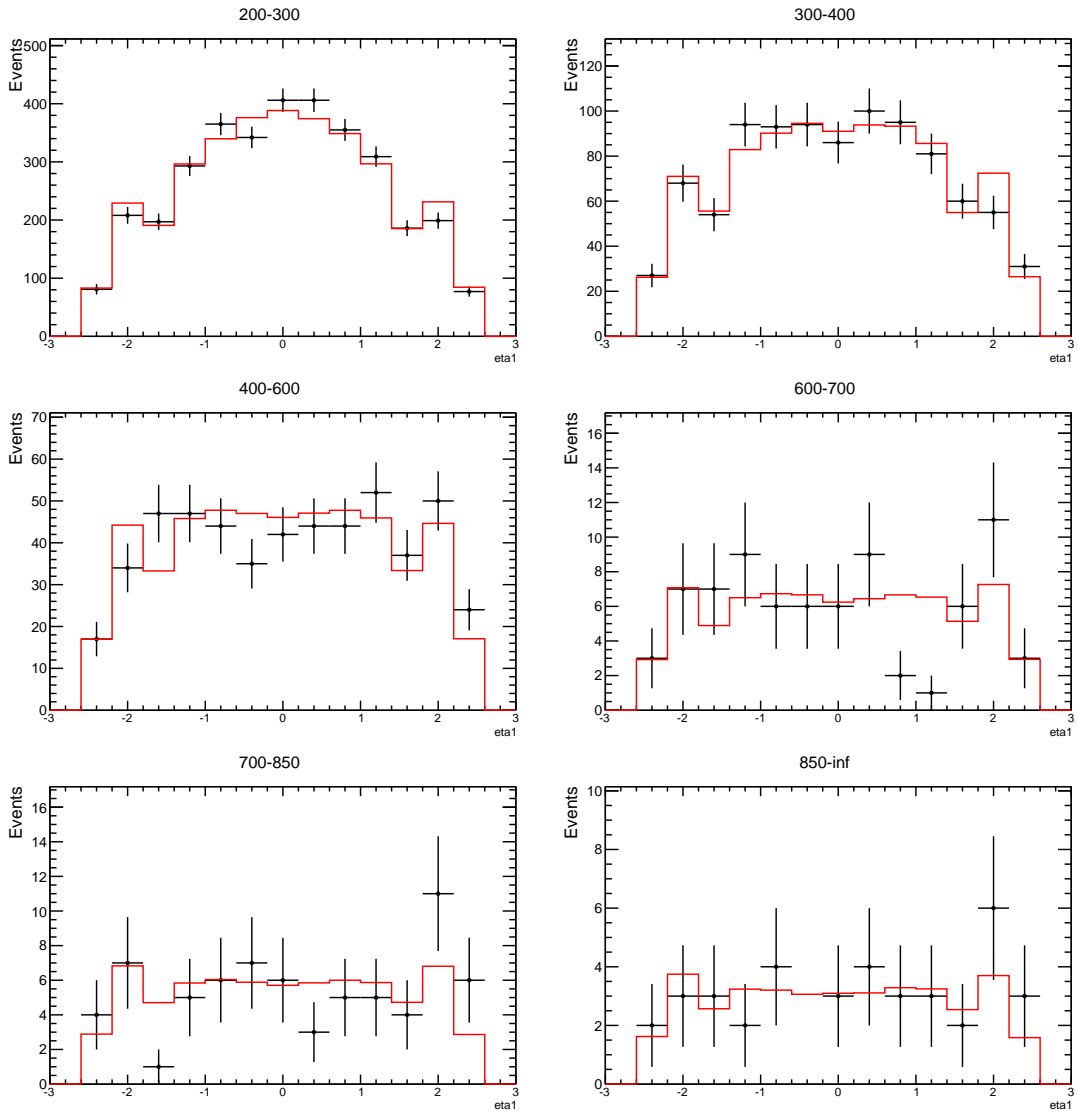


228 2.4.10 ptyy

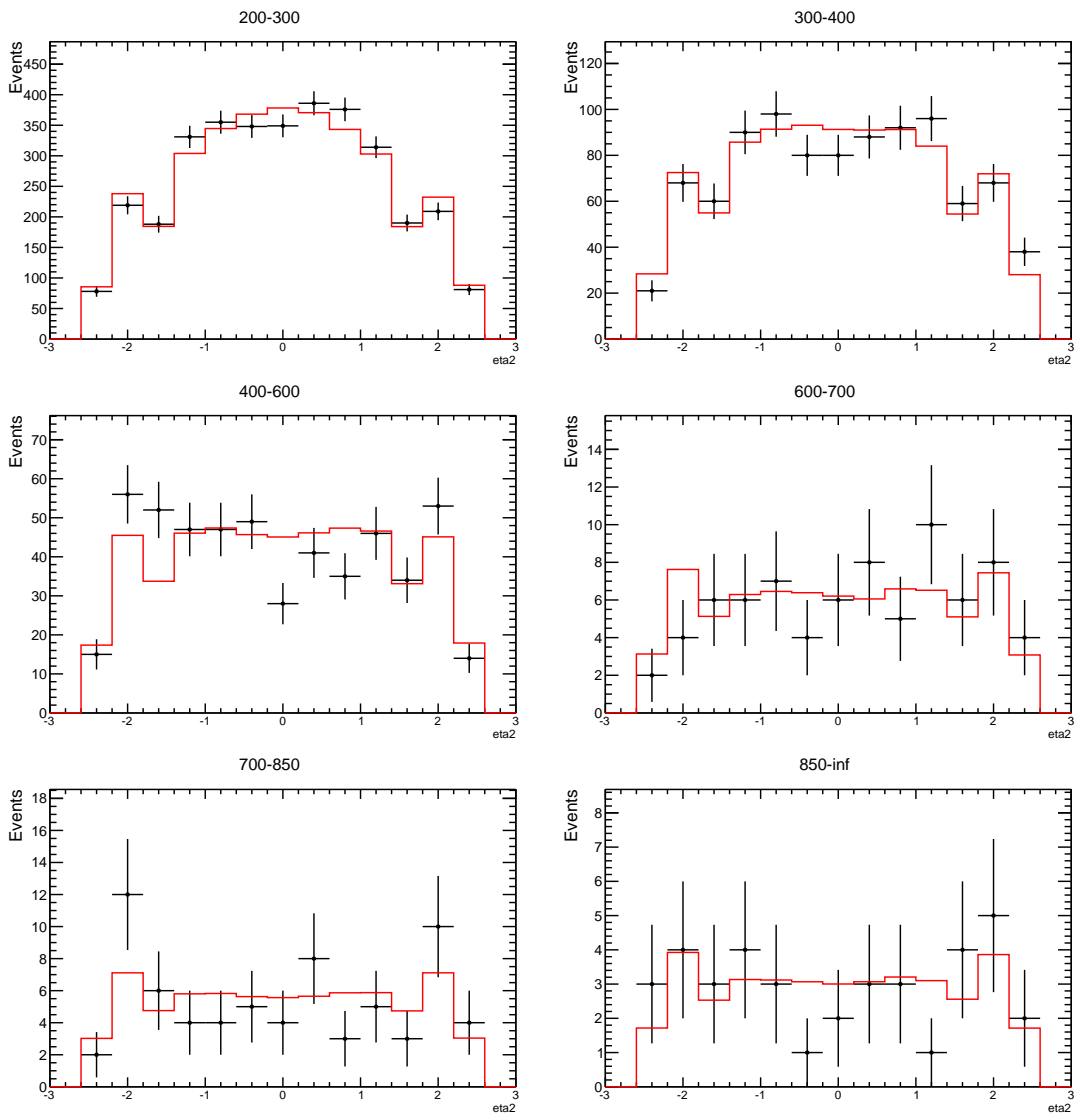


229 2.4.11 Njets



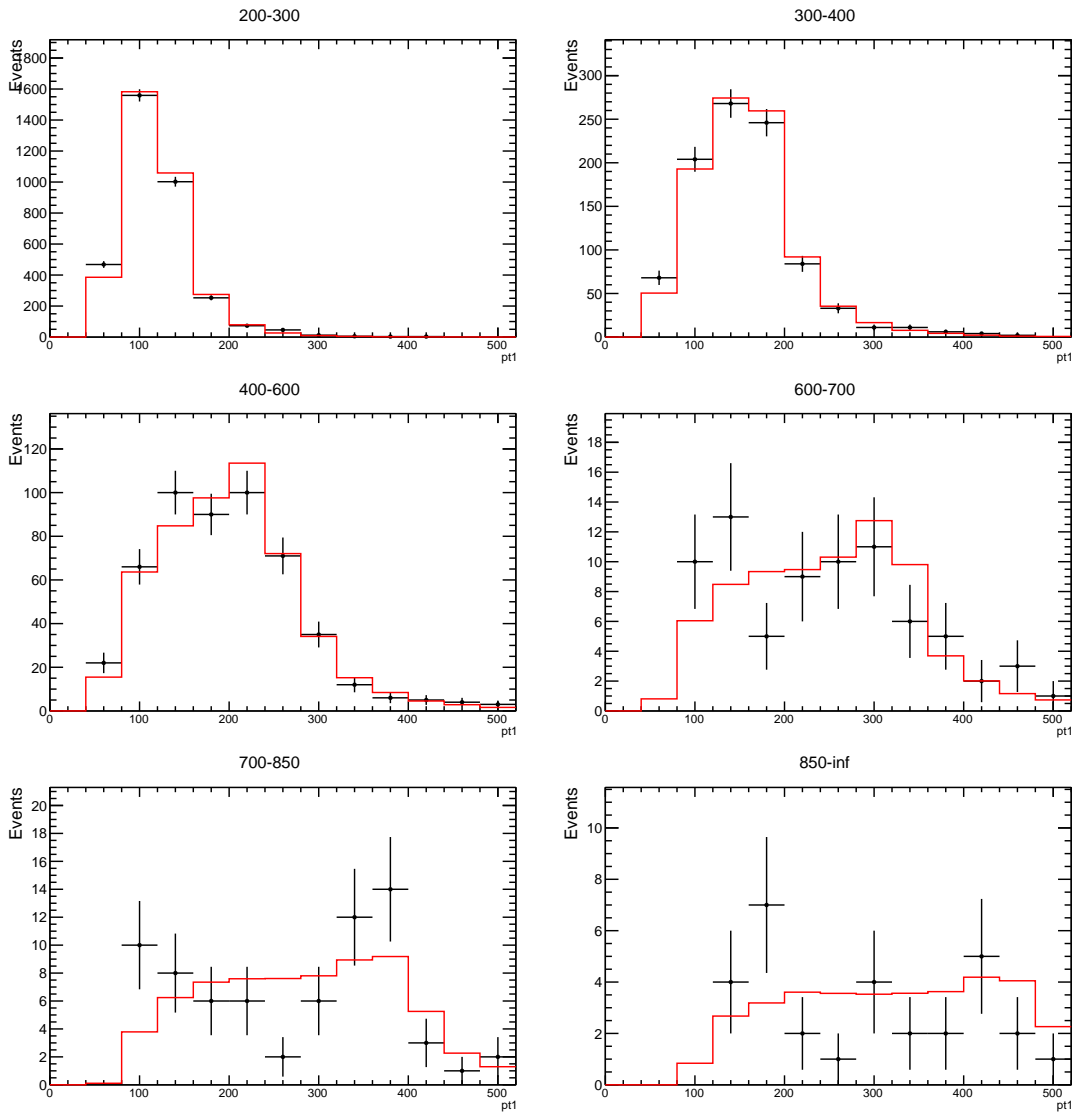
230 **3 Exotis with tight isolation**231 **3.1 Inclusive**232 **3.1.1 Eta1**

233 3.1.2 Eta2

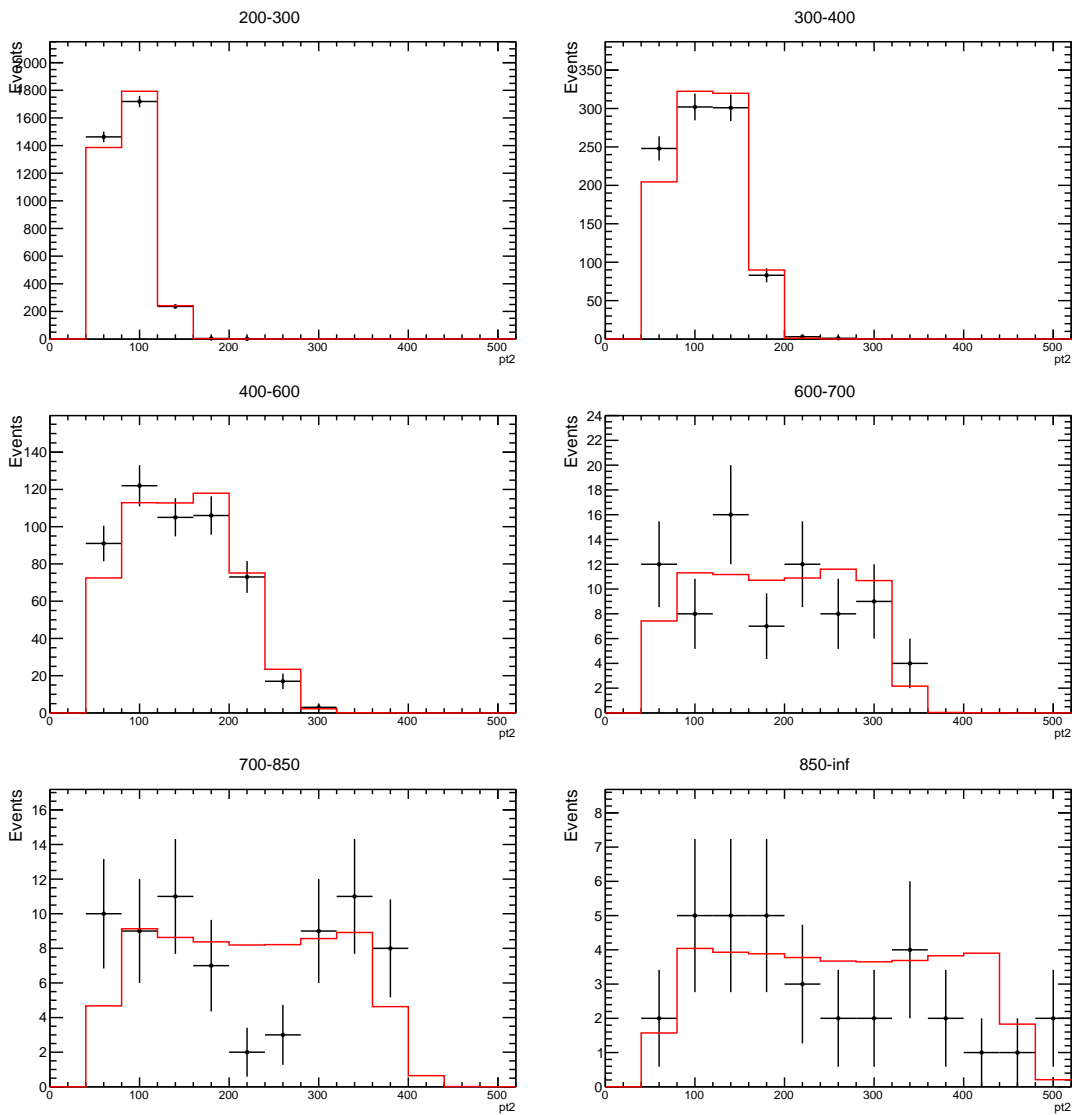




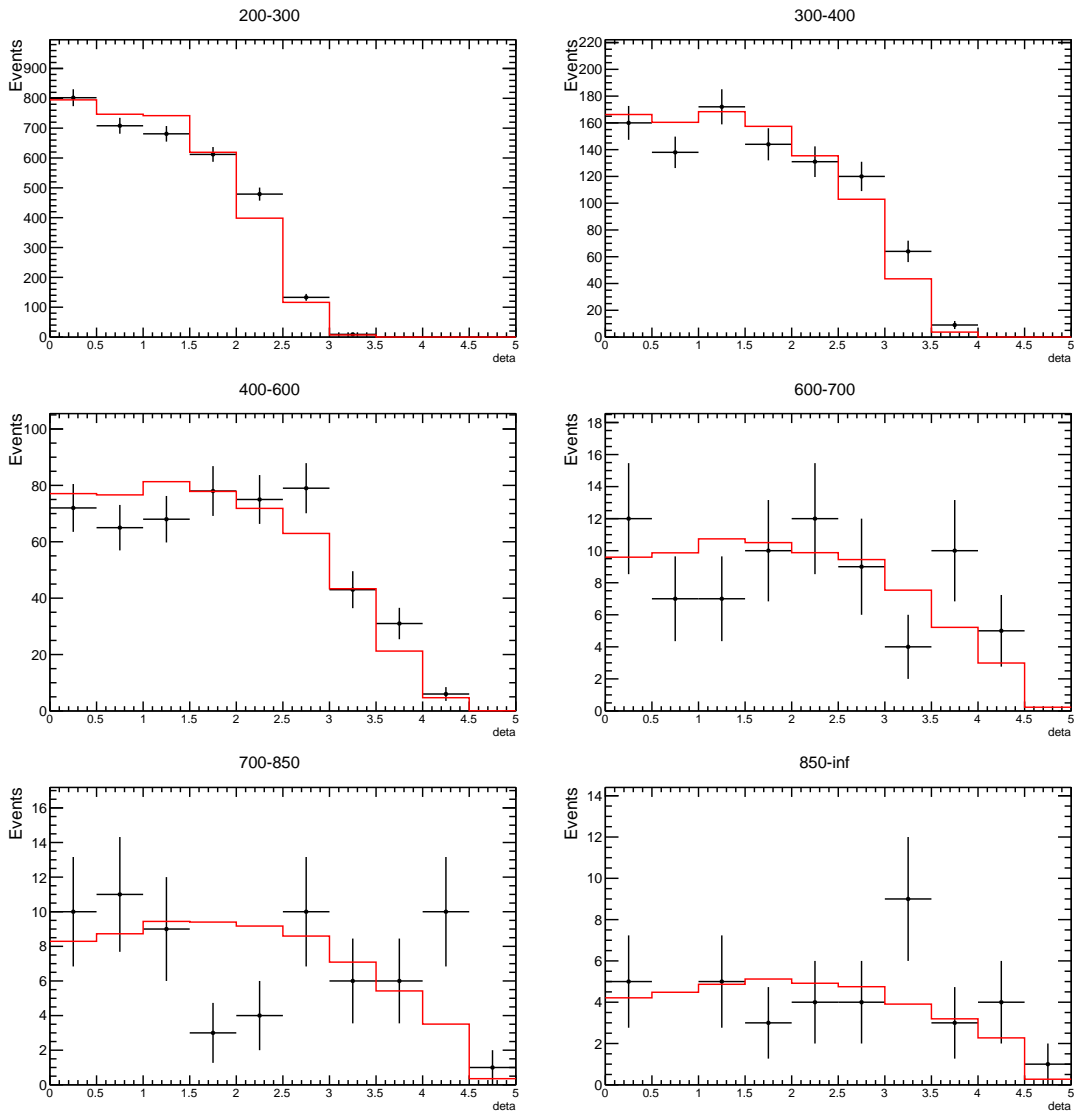
234 3.1.3 Pt1



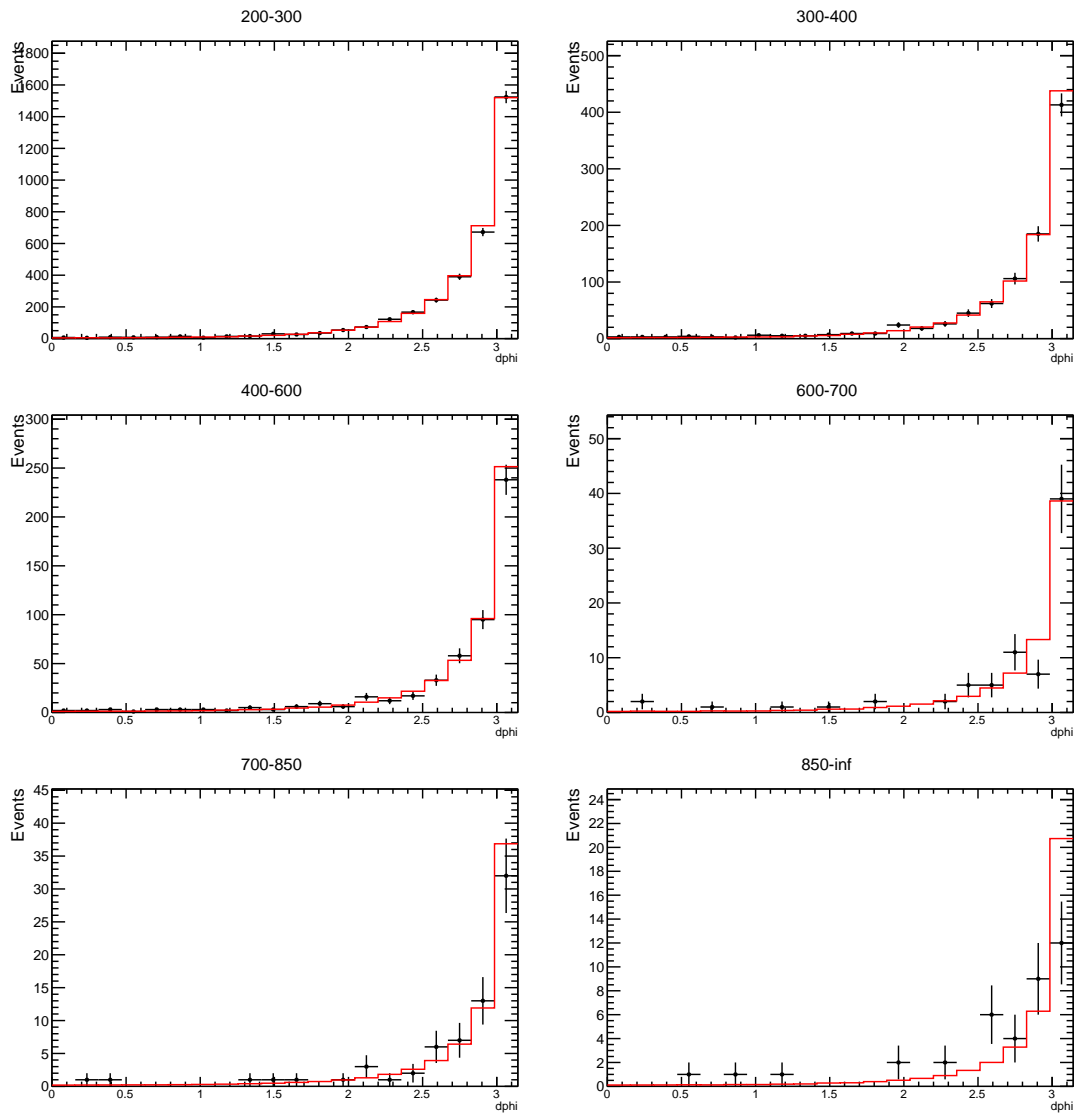
235 3.1.4 Pt2



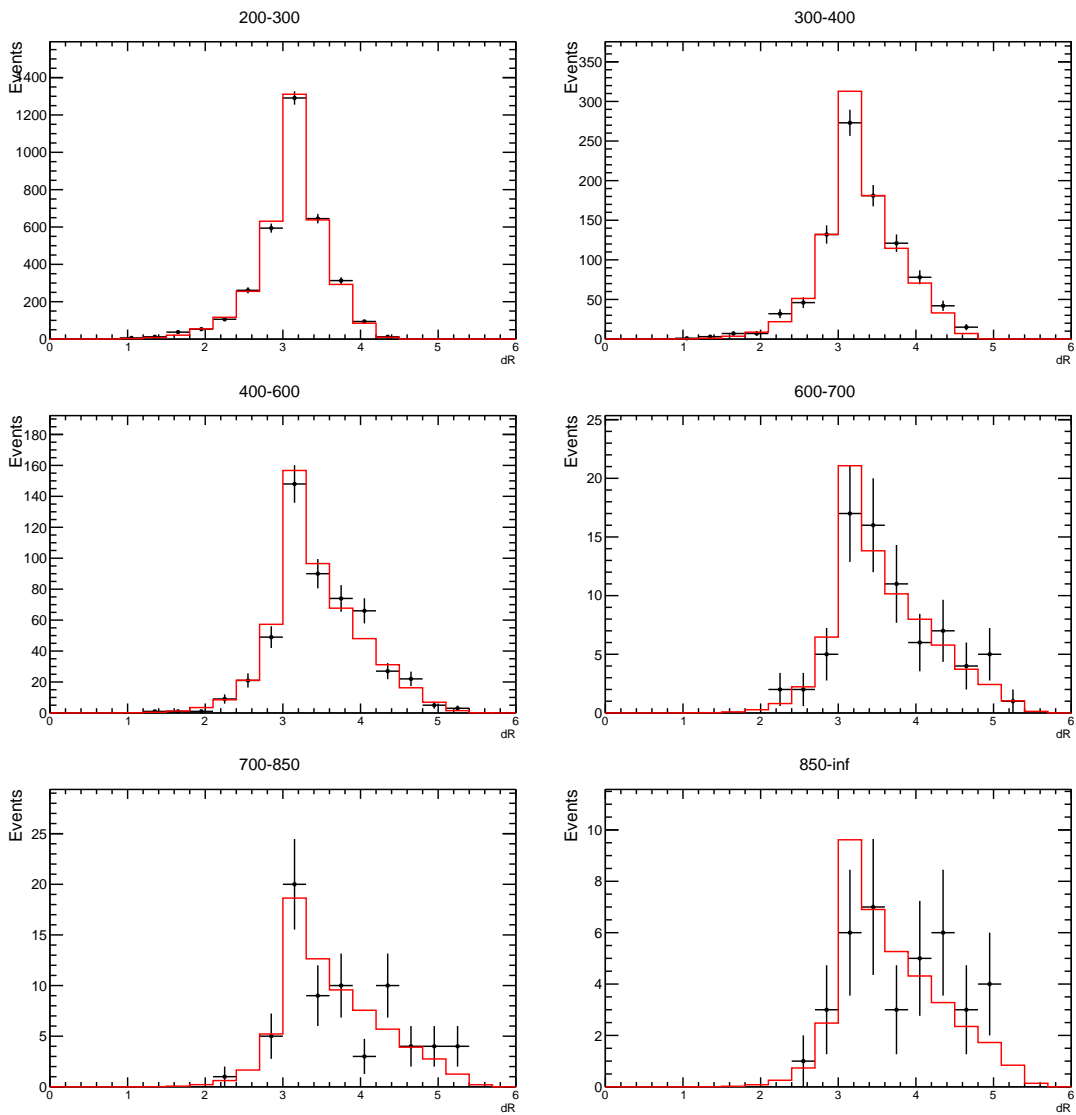
236 3.1.5 Deta



## 237 3.1.6 Dphi

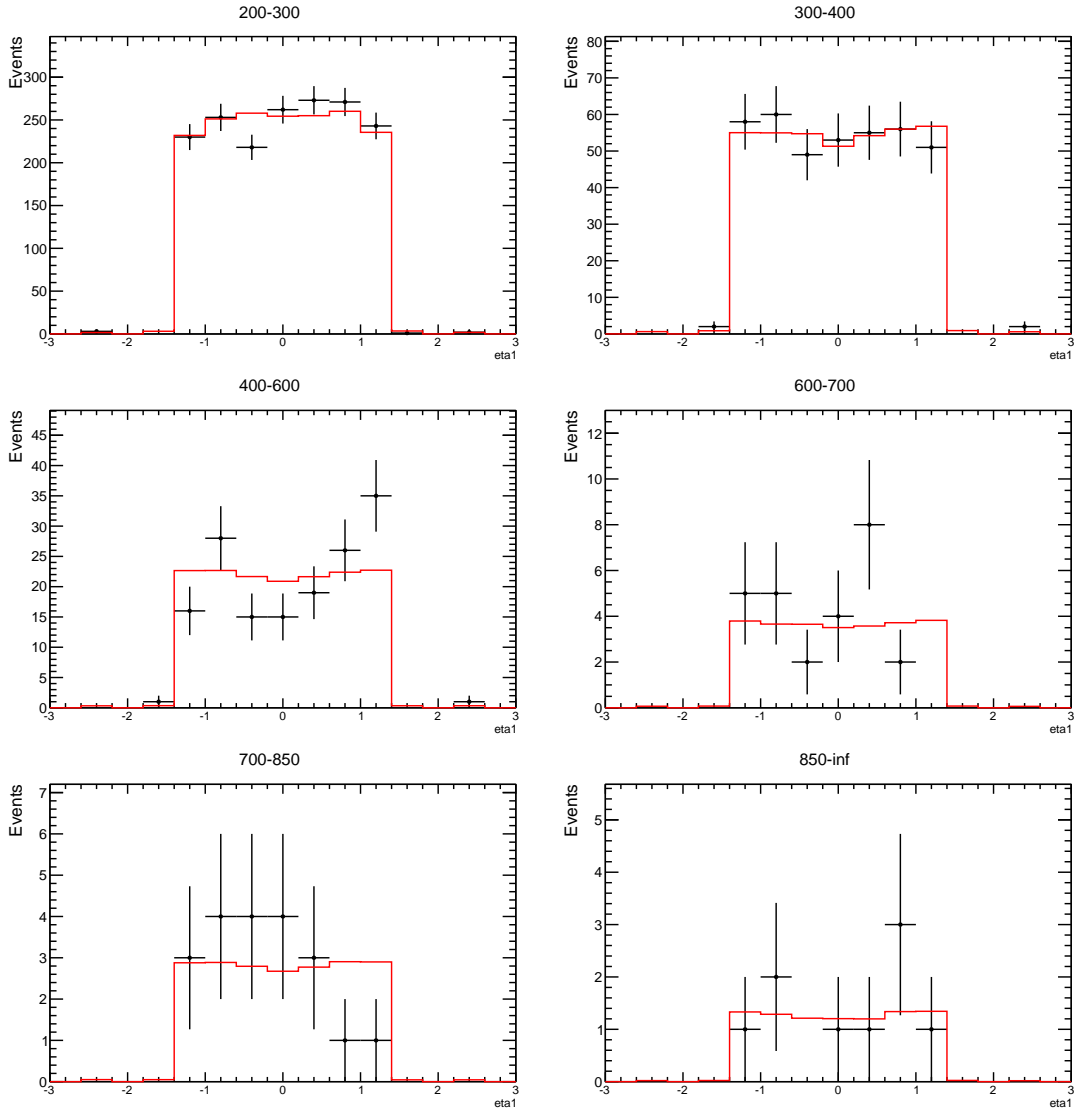


238 3.1.7 DR

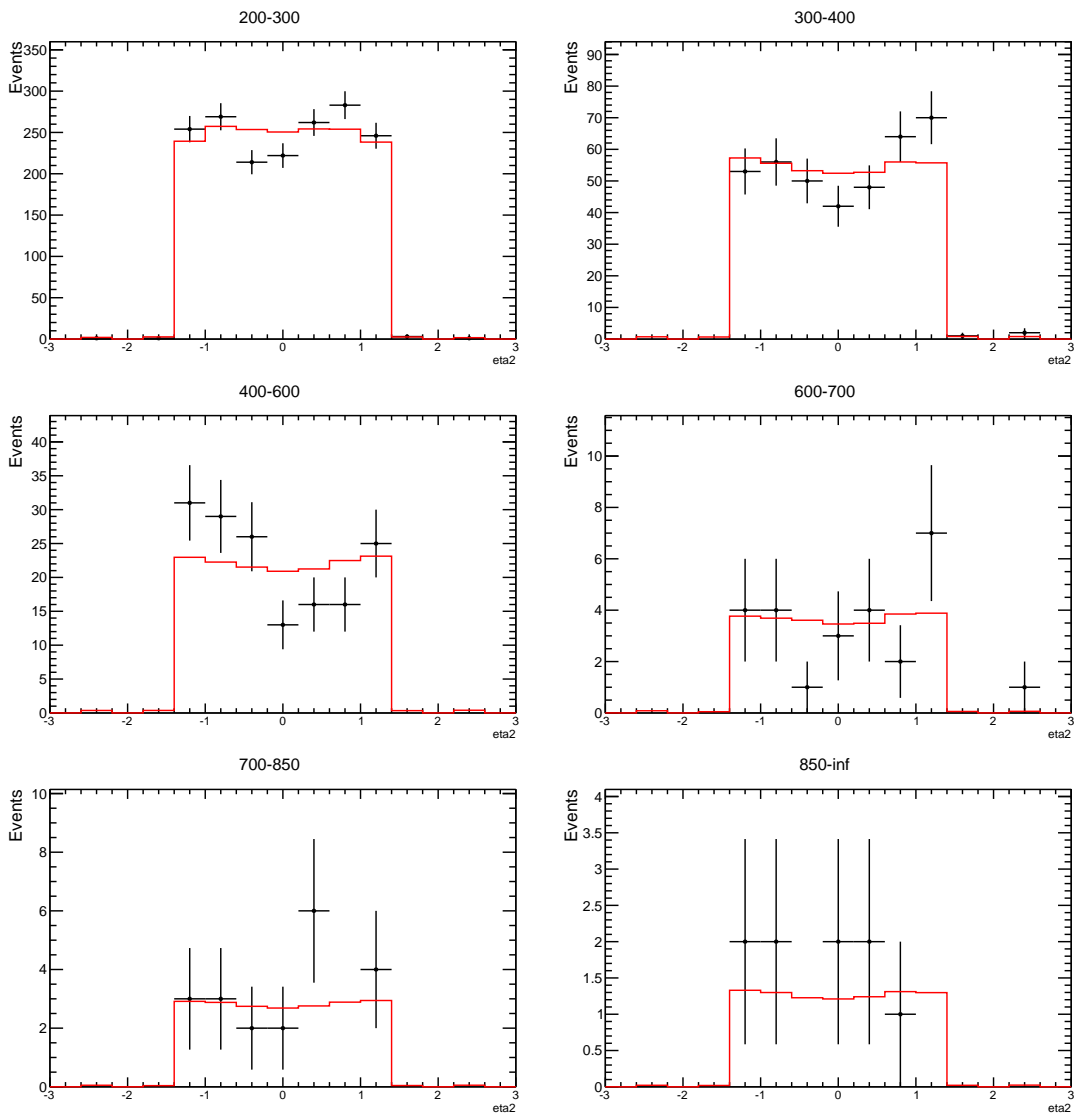


239 **3.2 BB**

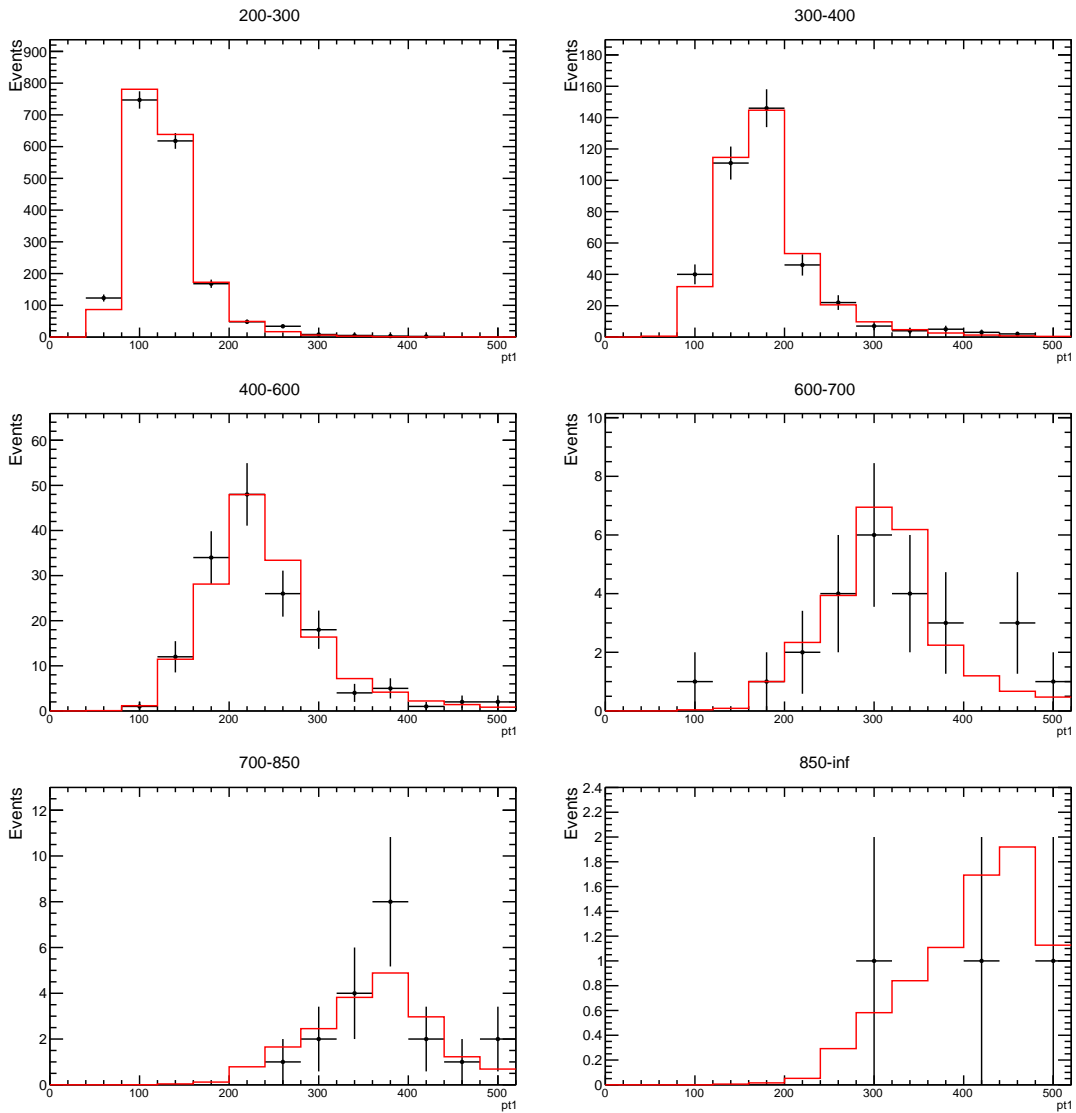
240 **3.2.1 Eta1**



241 3.2.2 Eta2

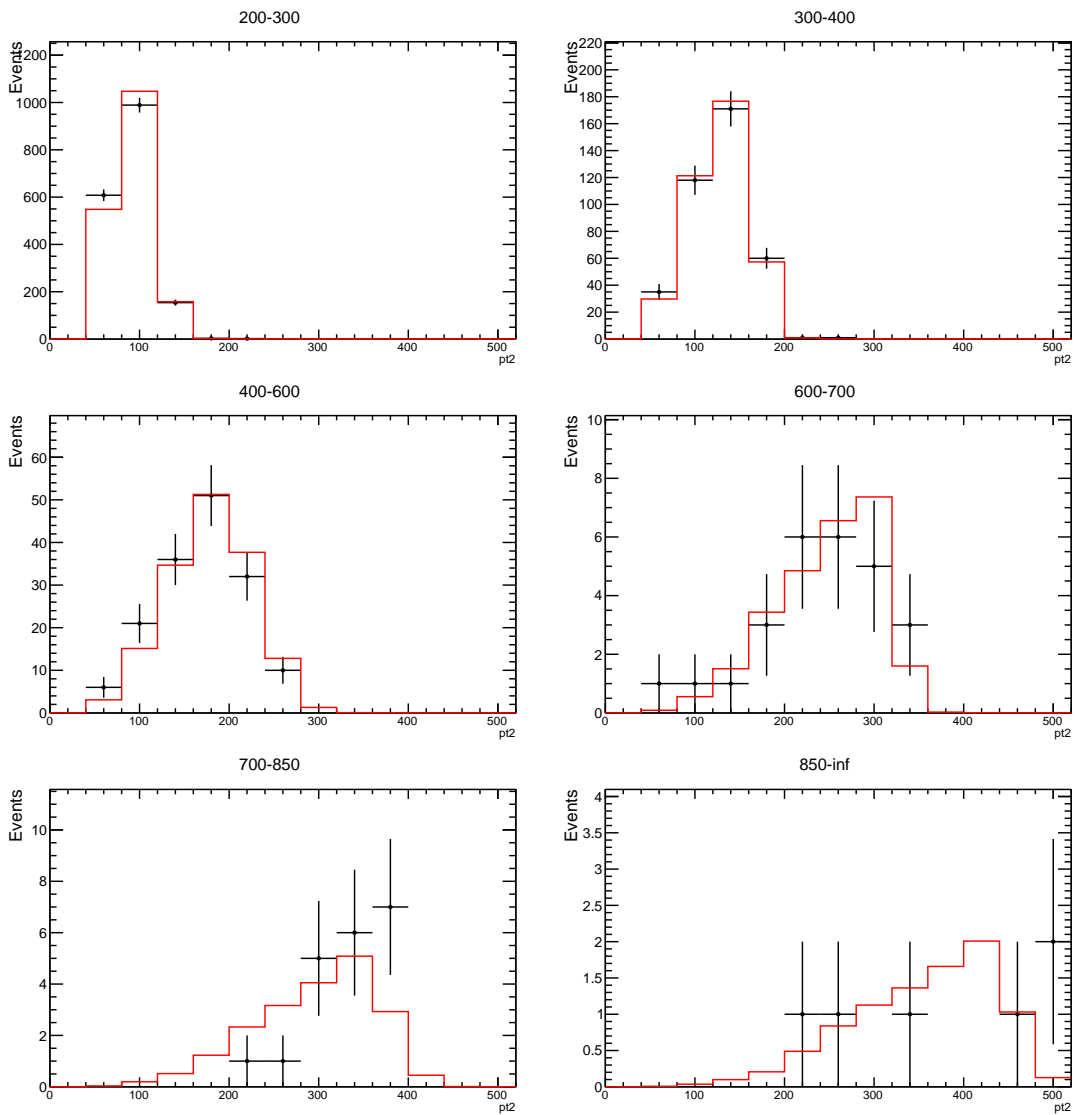


242 3.2.3 Pt1

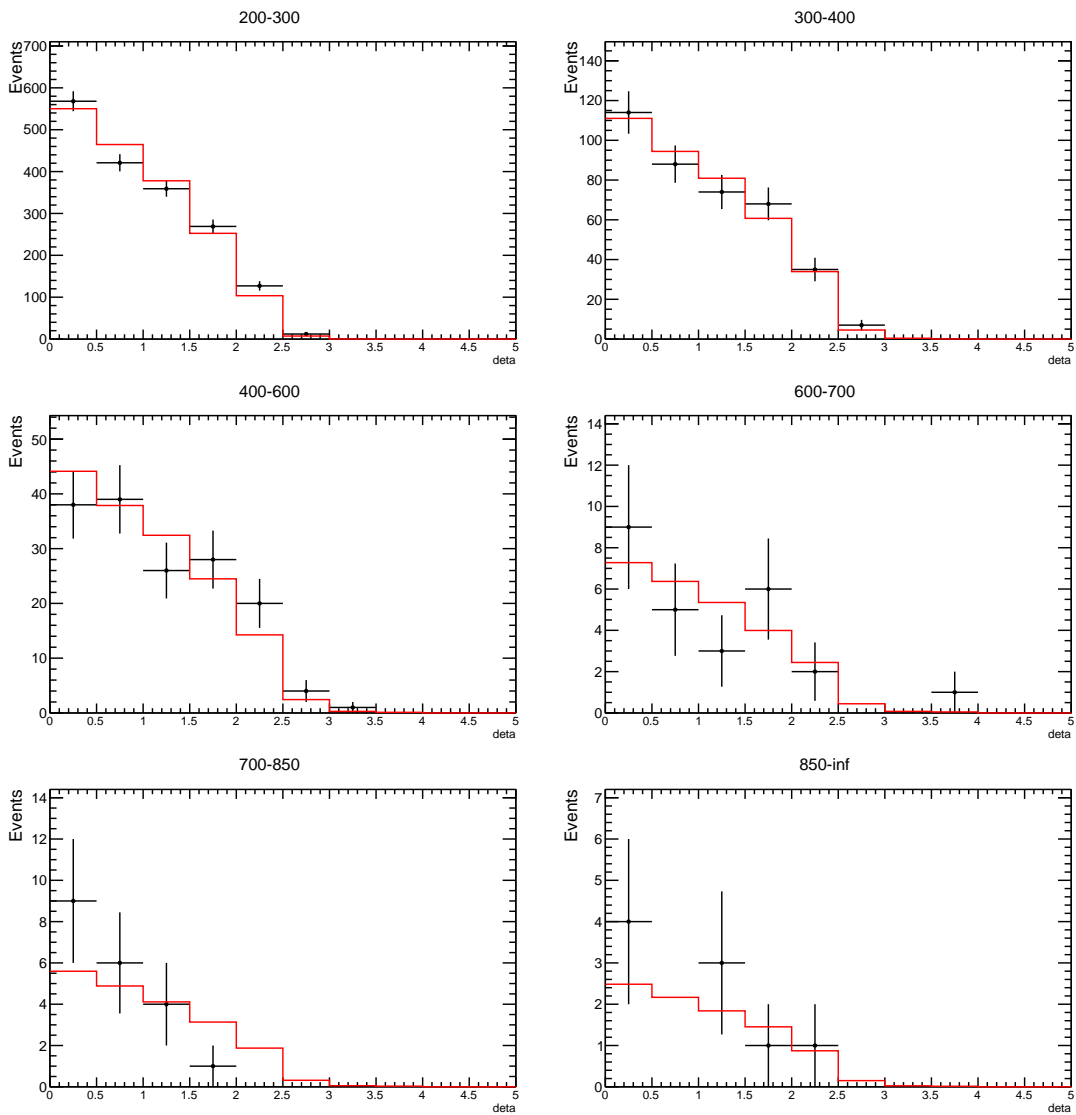




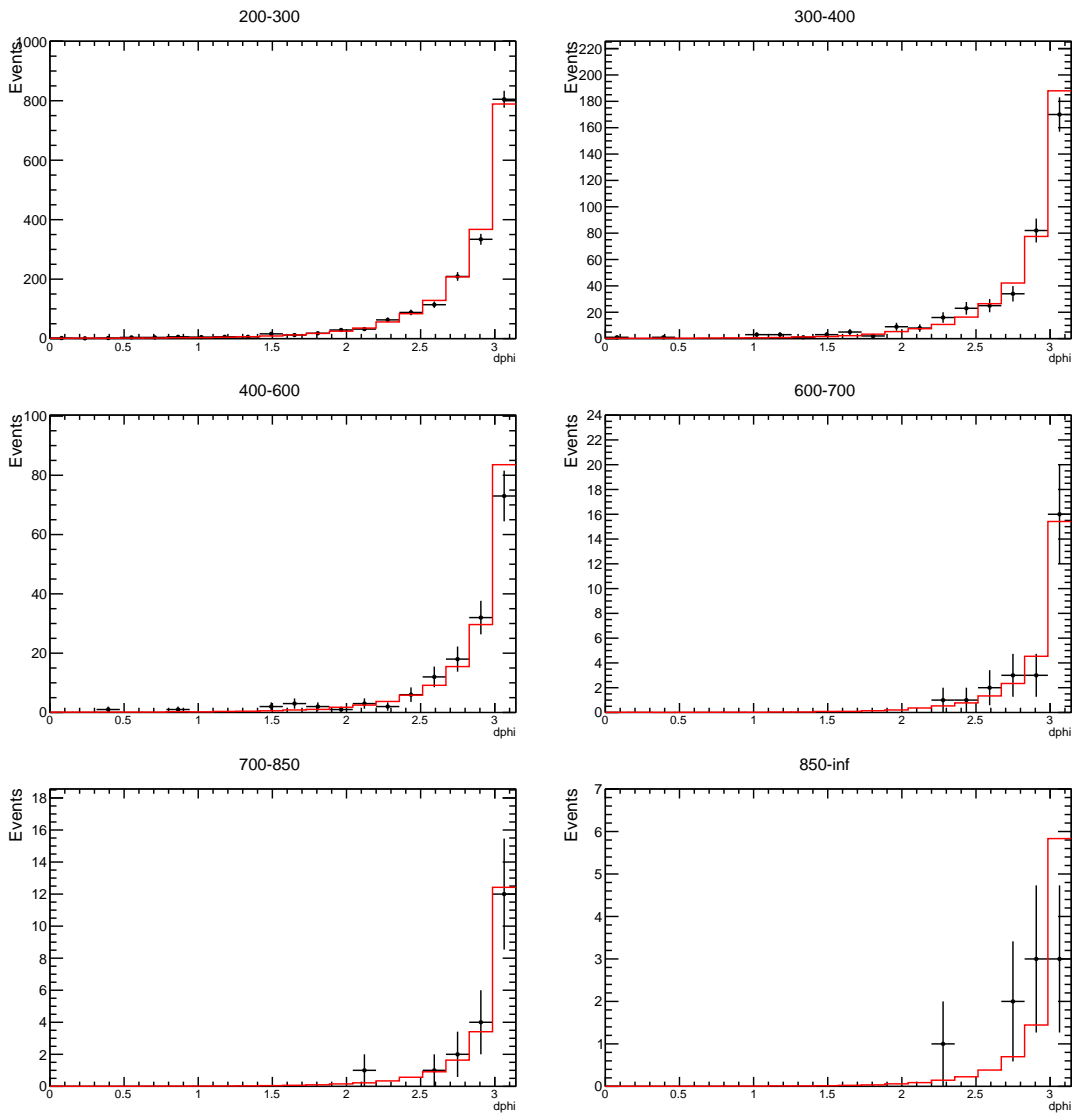
243 3.2.4 Pt2



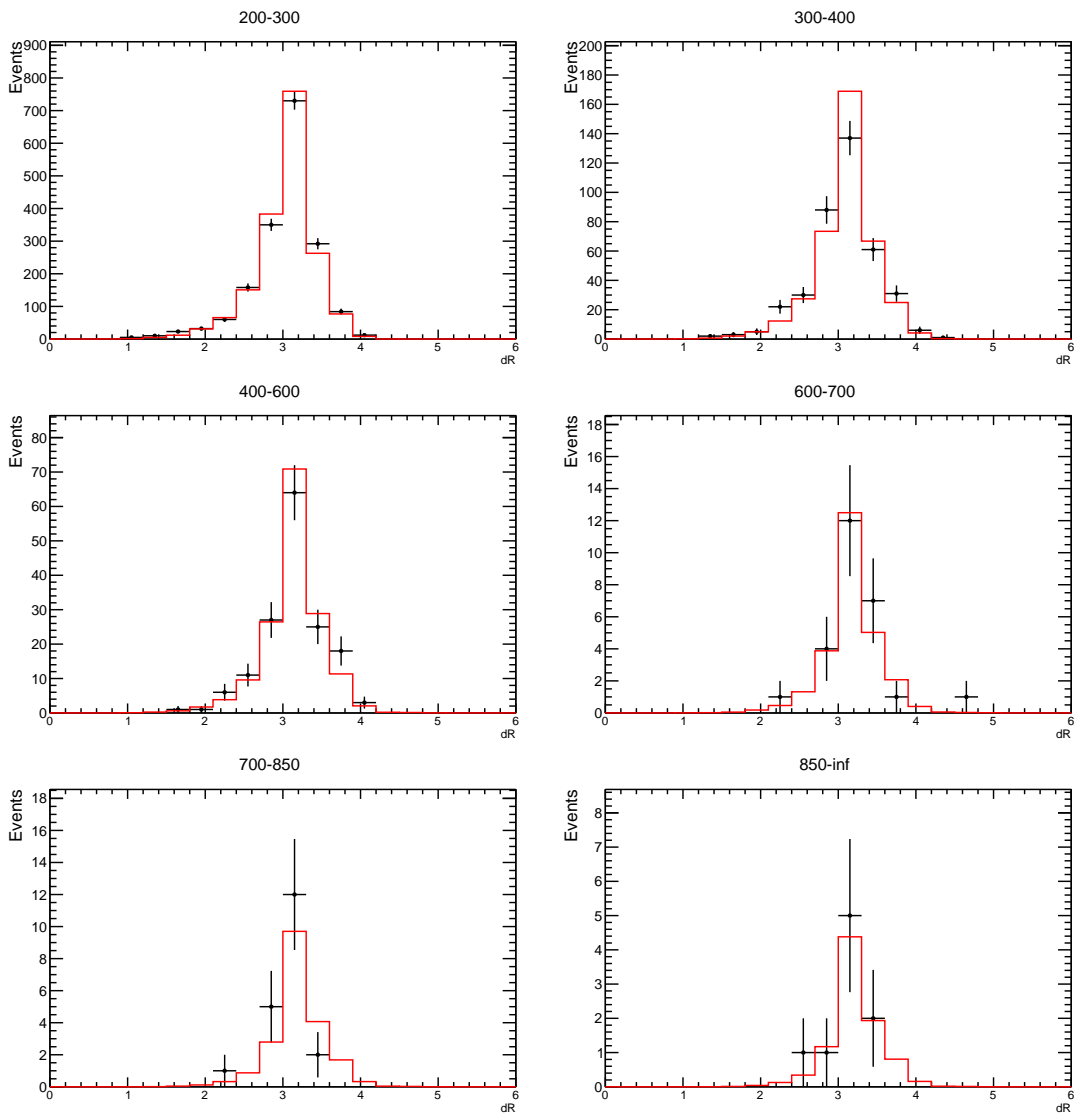
244 3.2.5 Deta



245 3.2.6 Dphi

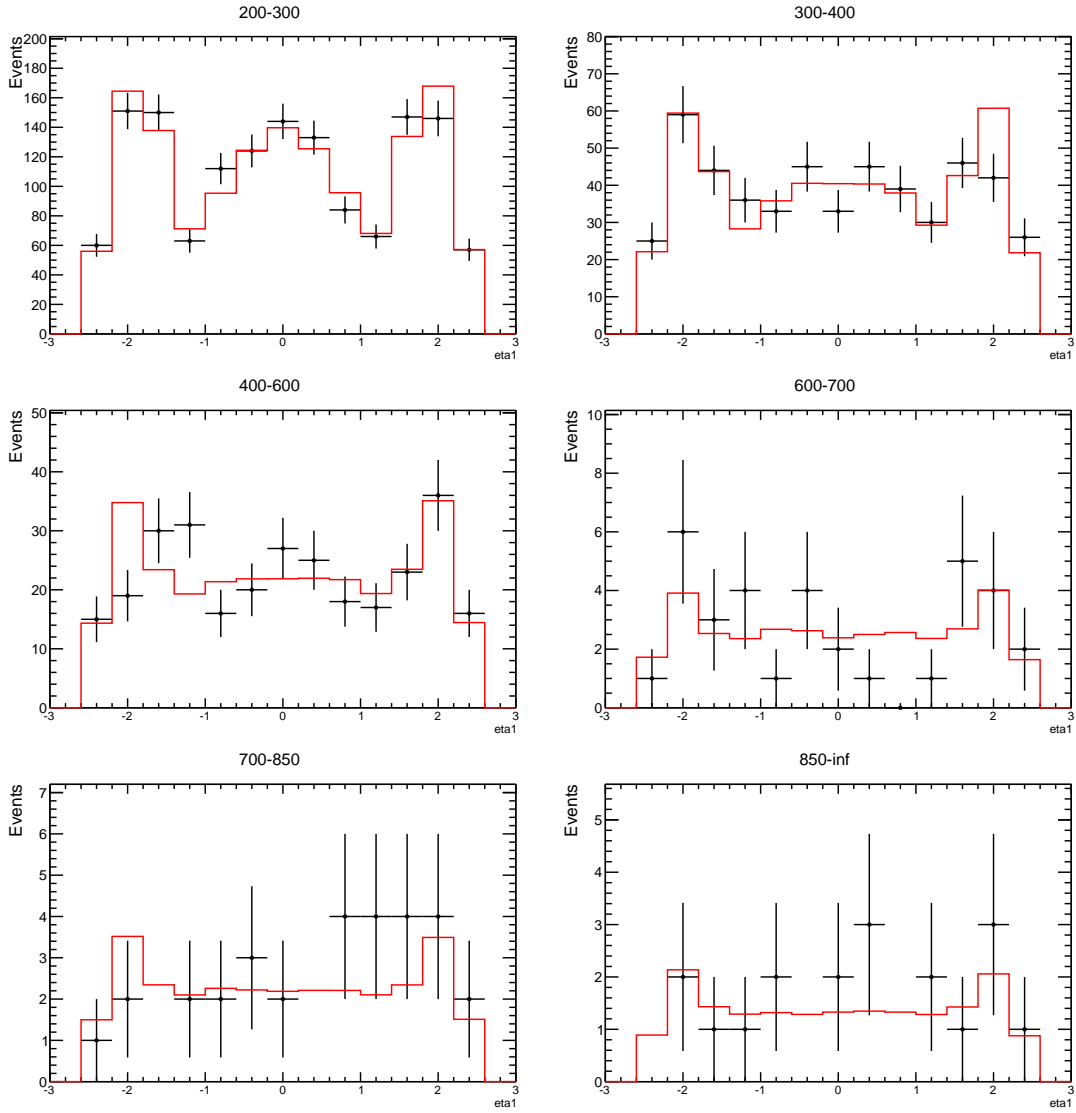


246 3.2.7 DR

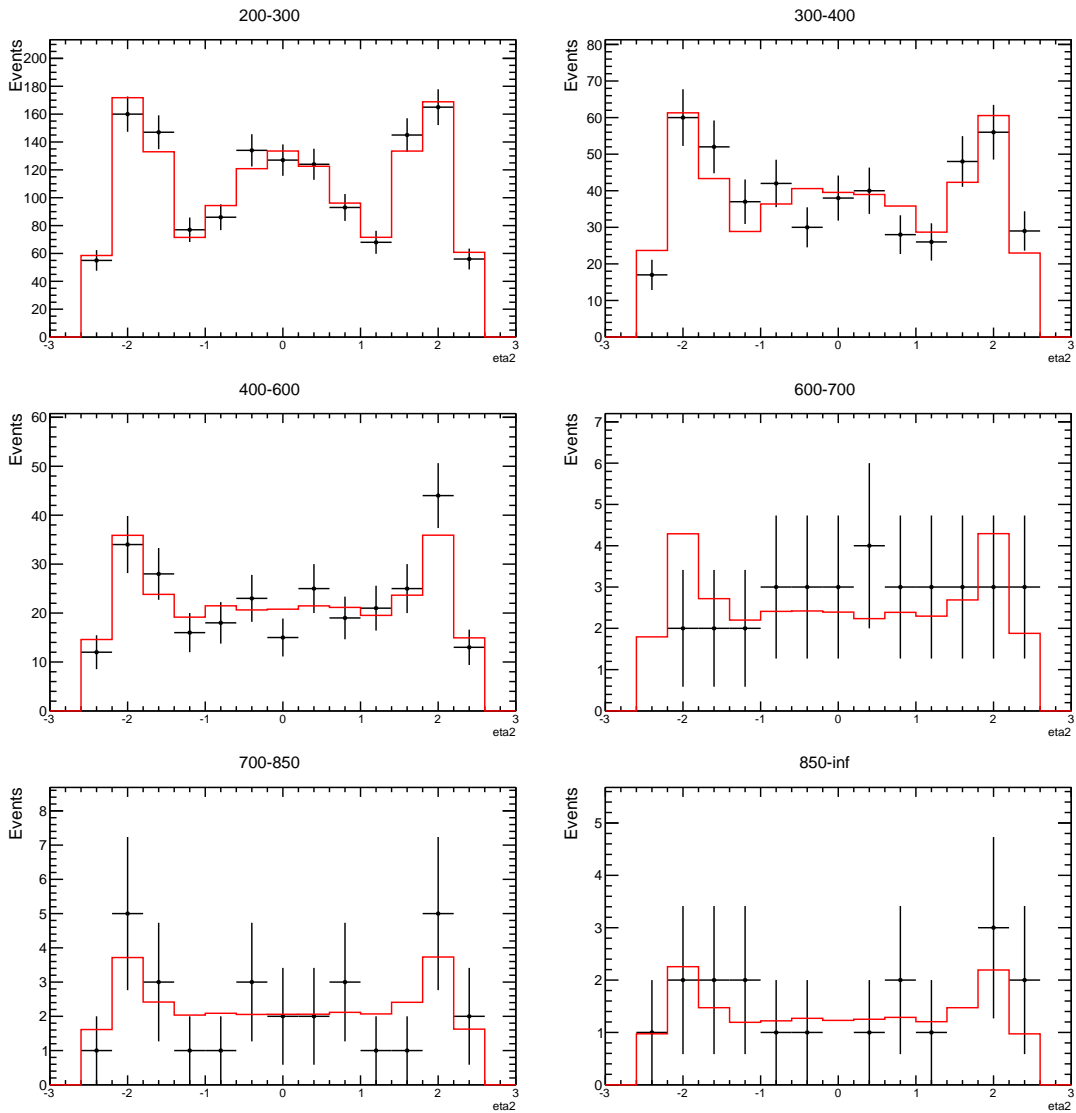


247 **3.3 BEEB**

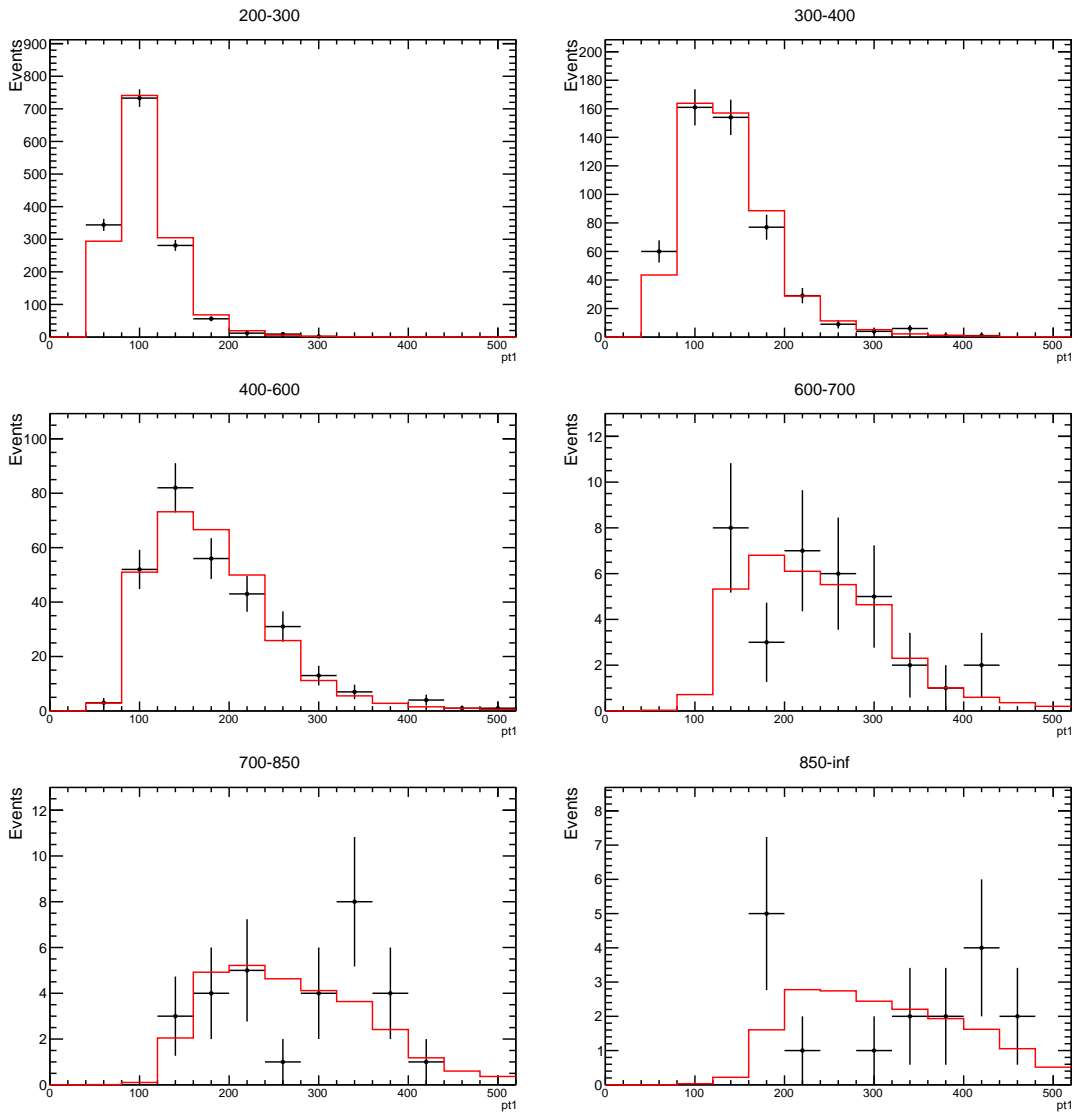
248 **3.3.1 Eta1**



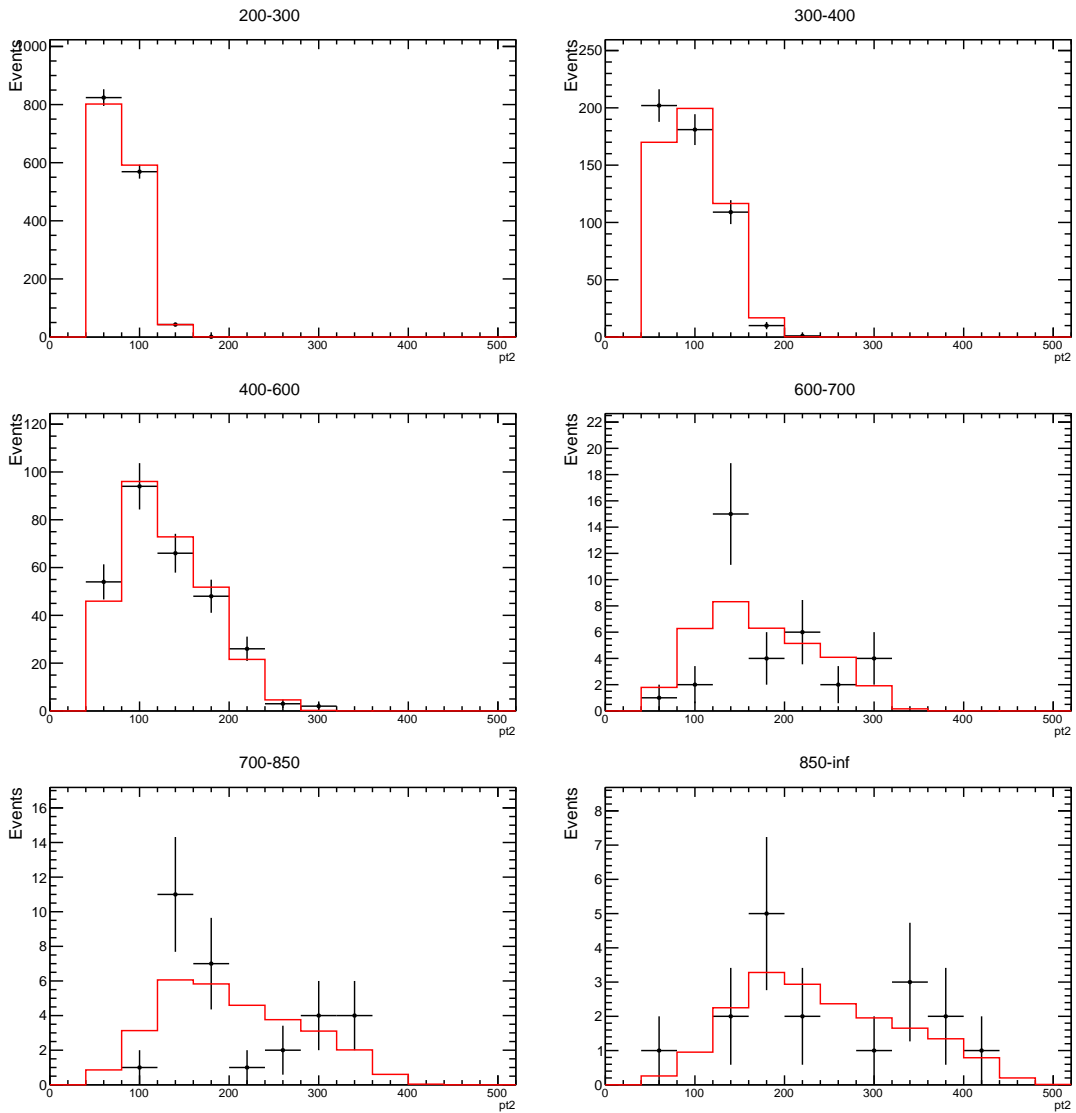
249 3.3.2 Eta2



250 3.3.3 Pt1

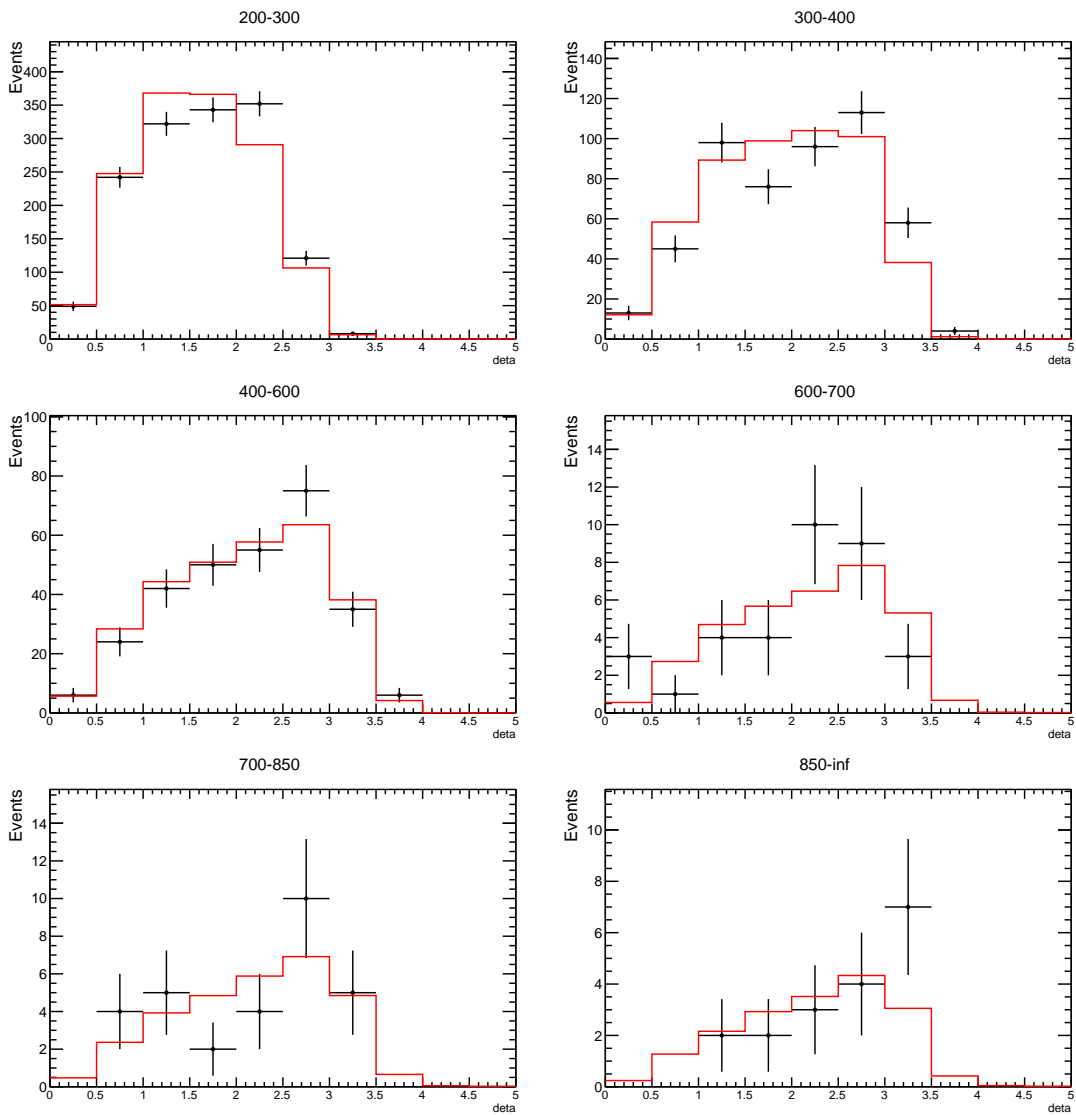


251 3.3.4 Pt2

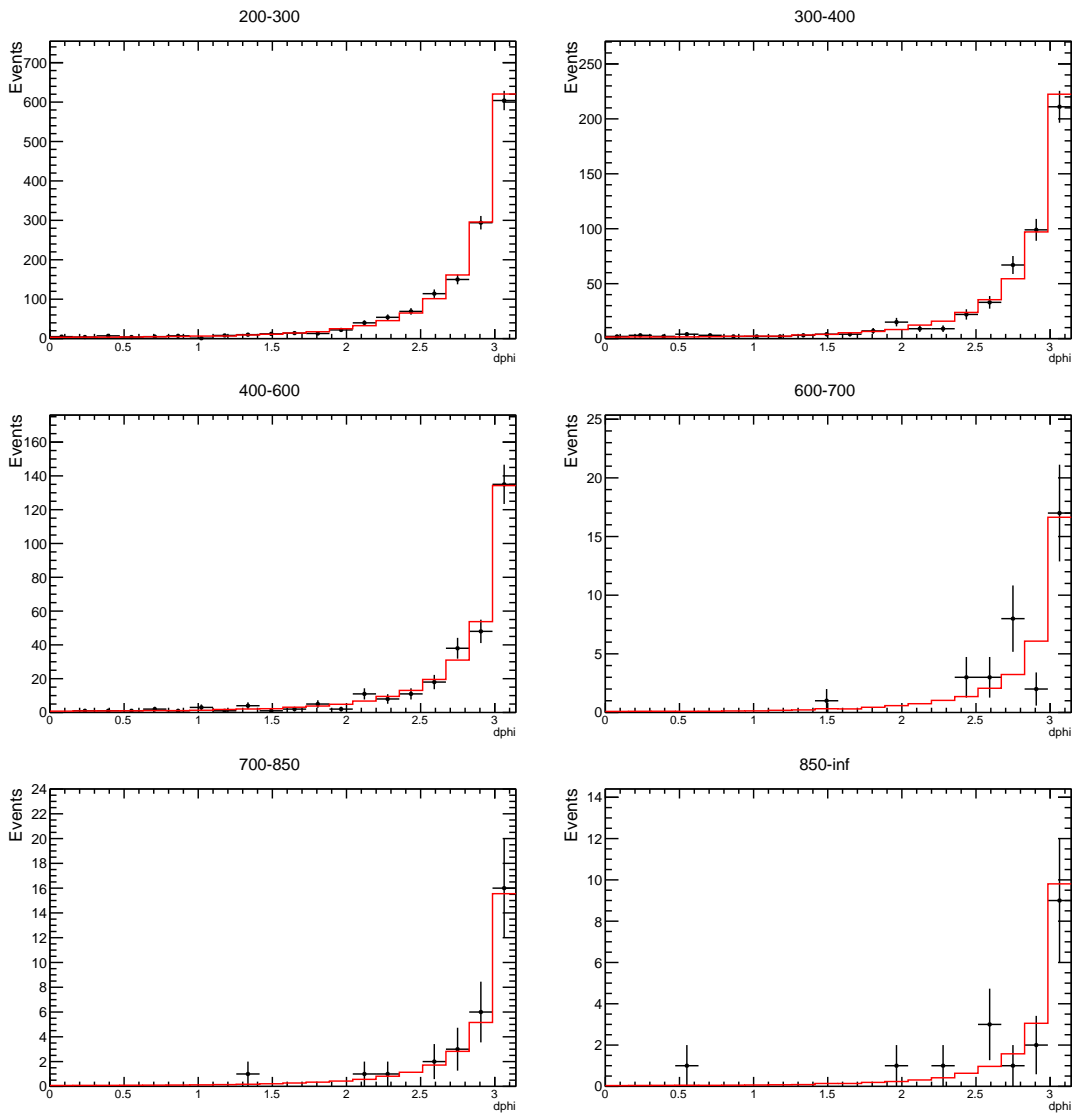




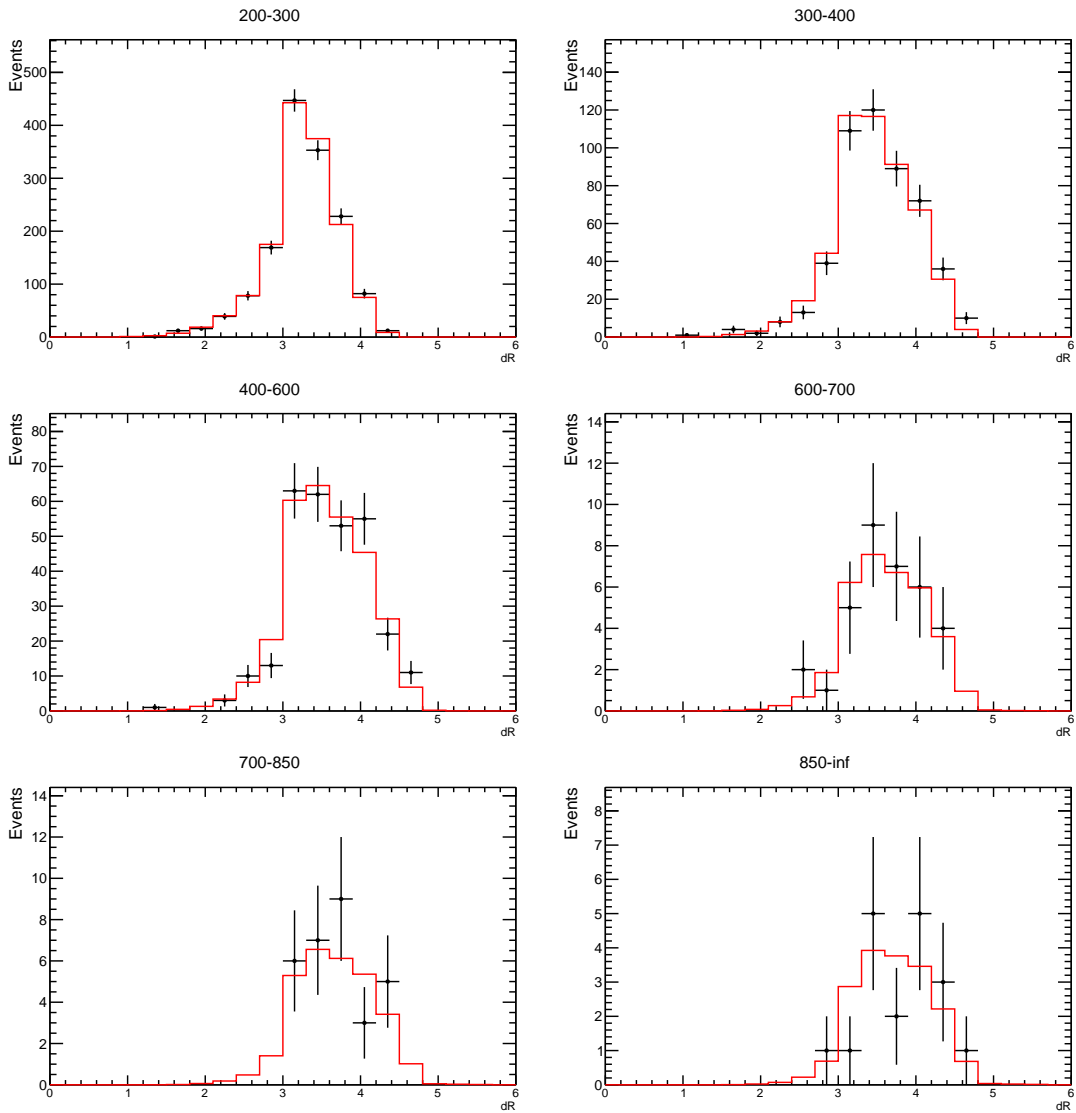
252 3.3.5 Deta



253 3.3.6 Dphi

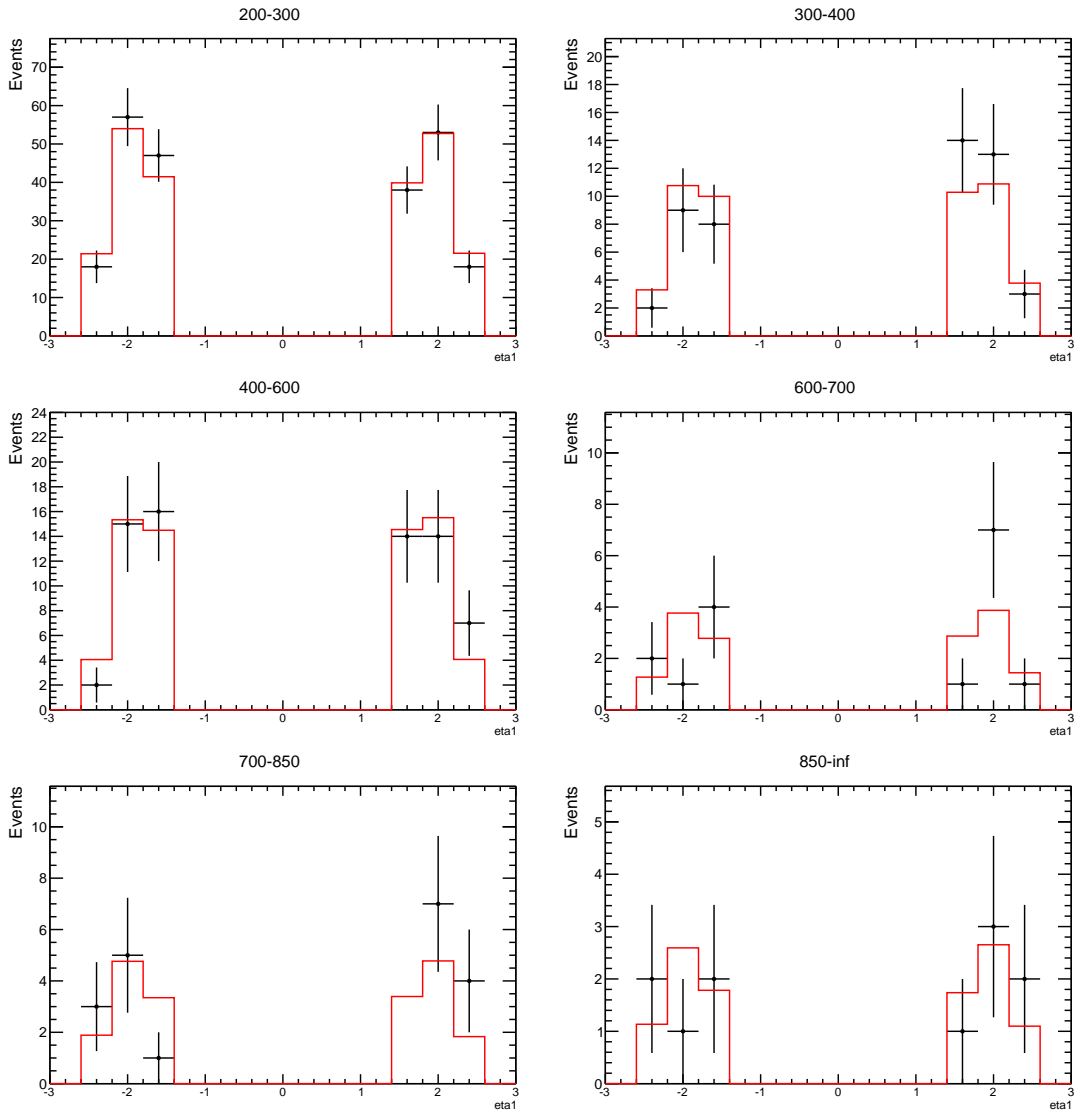


254 3.3.7 DR

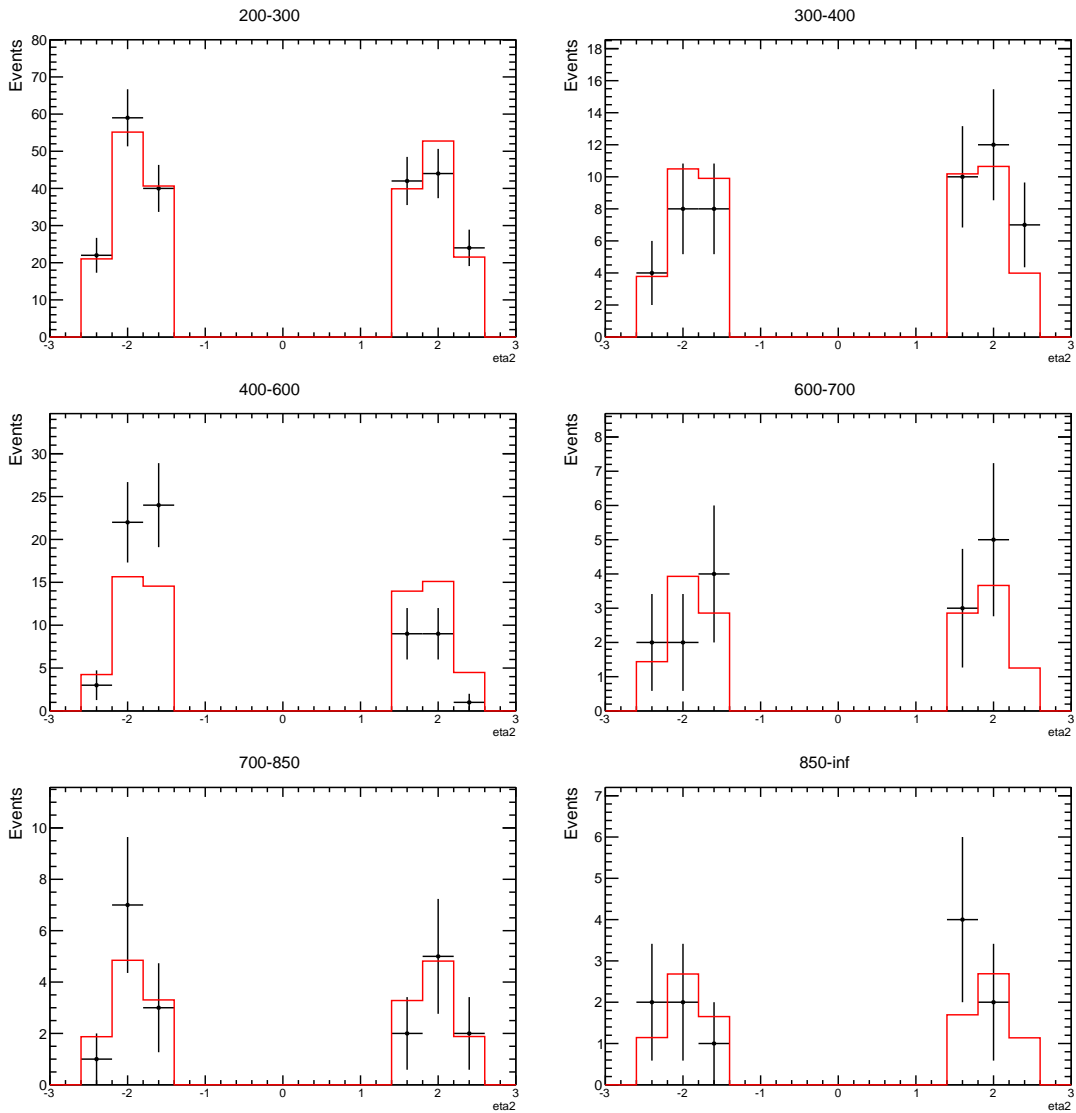


255 **3.4 EE**

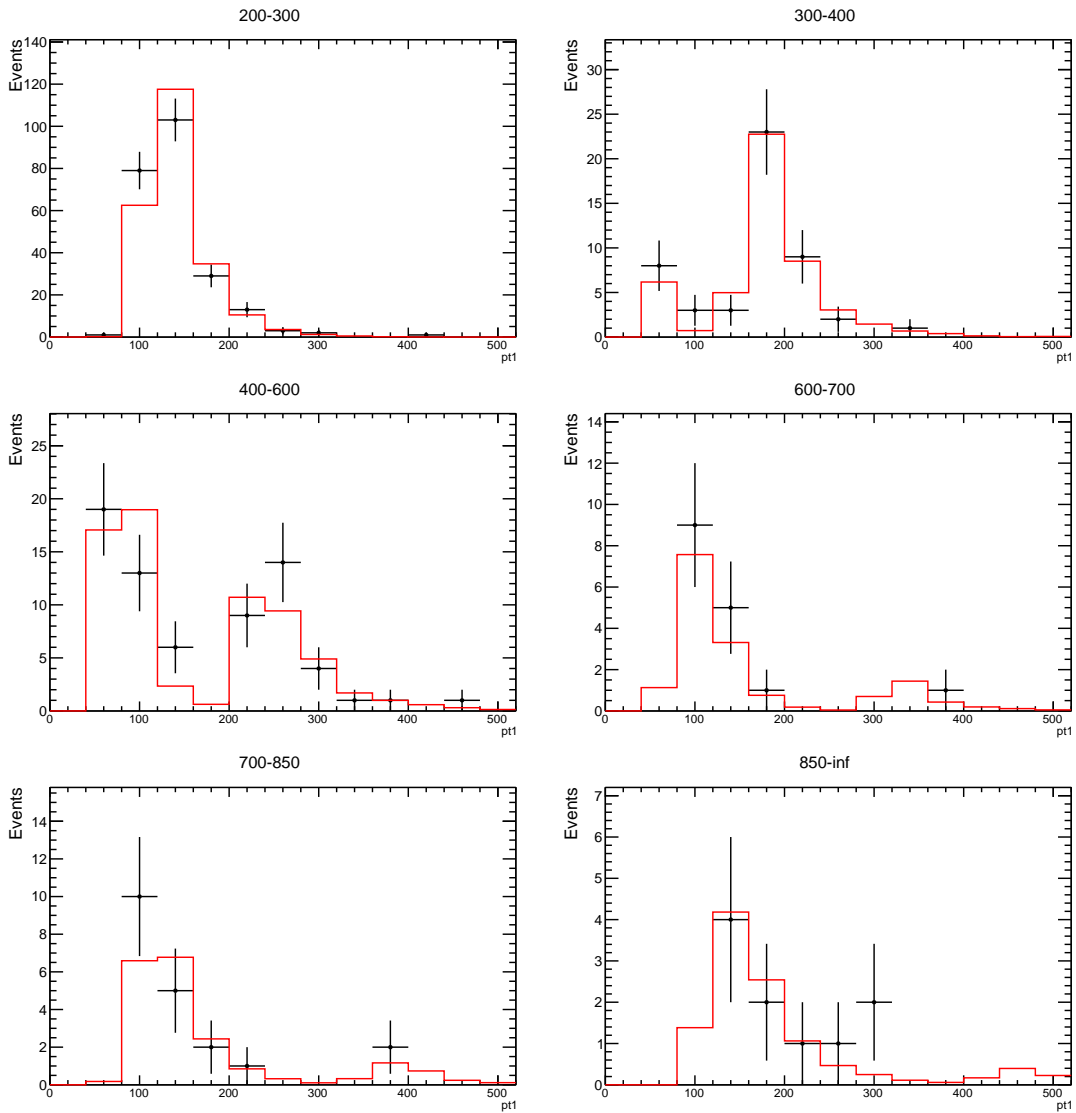
256 **3.4.1 Eta1**



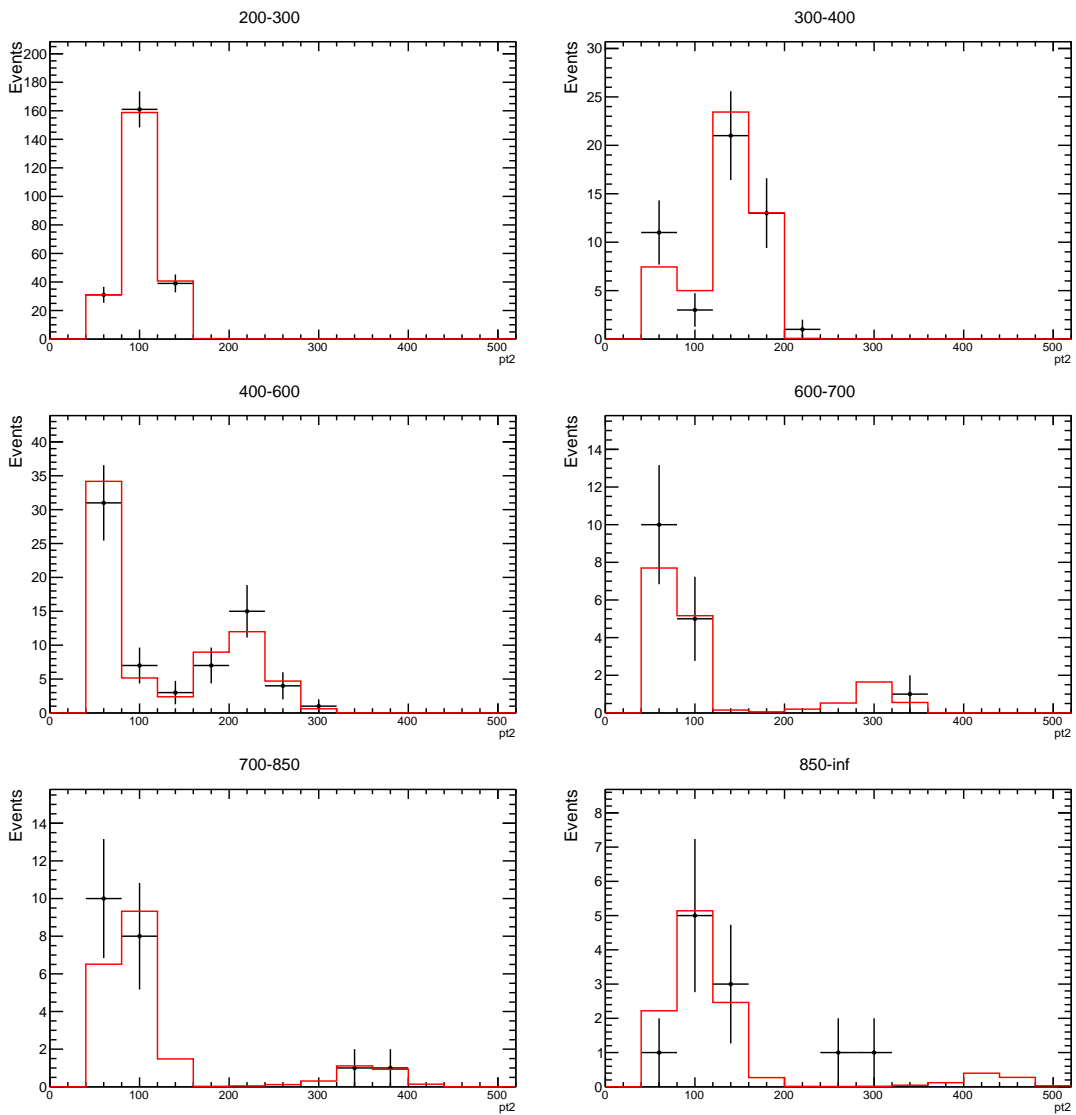
257 3.4.2 Eta2



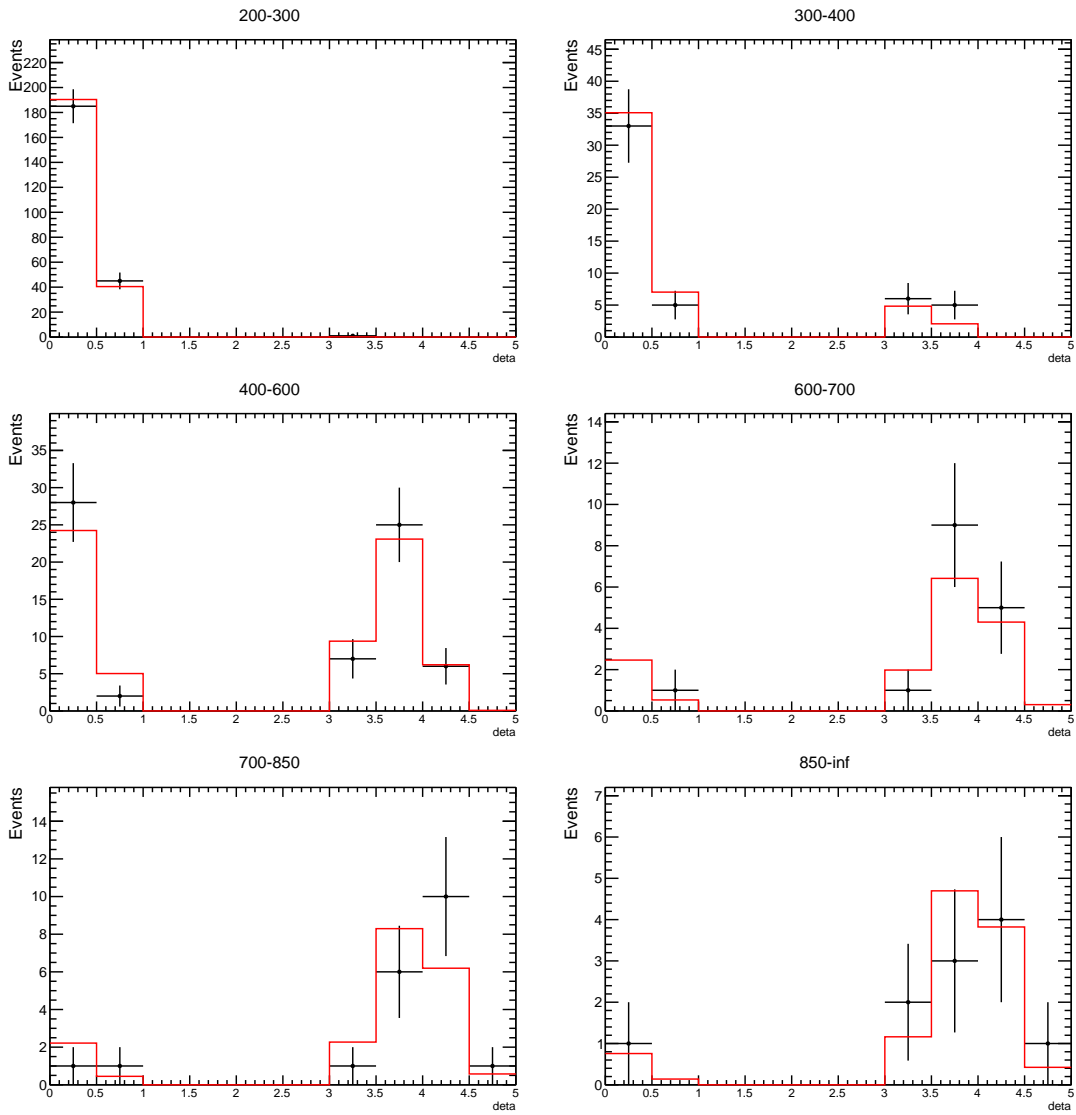
258 3.4.3 Pt1



259 3.4.4 Pt2

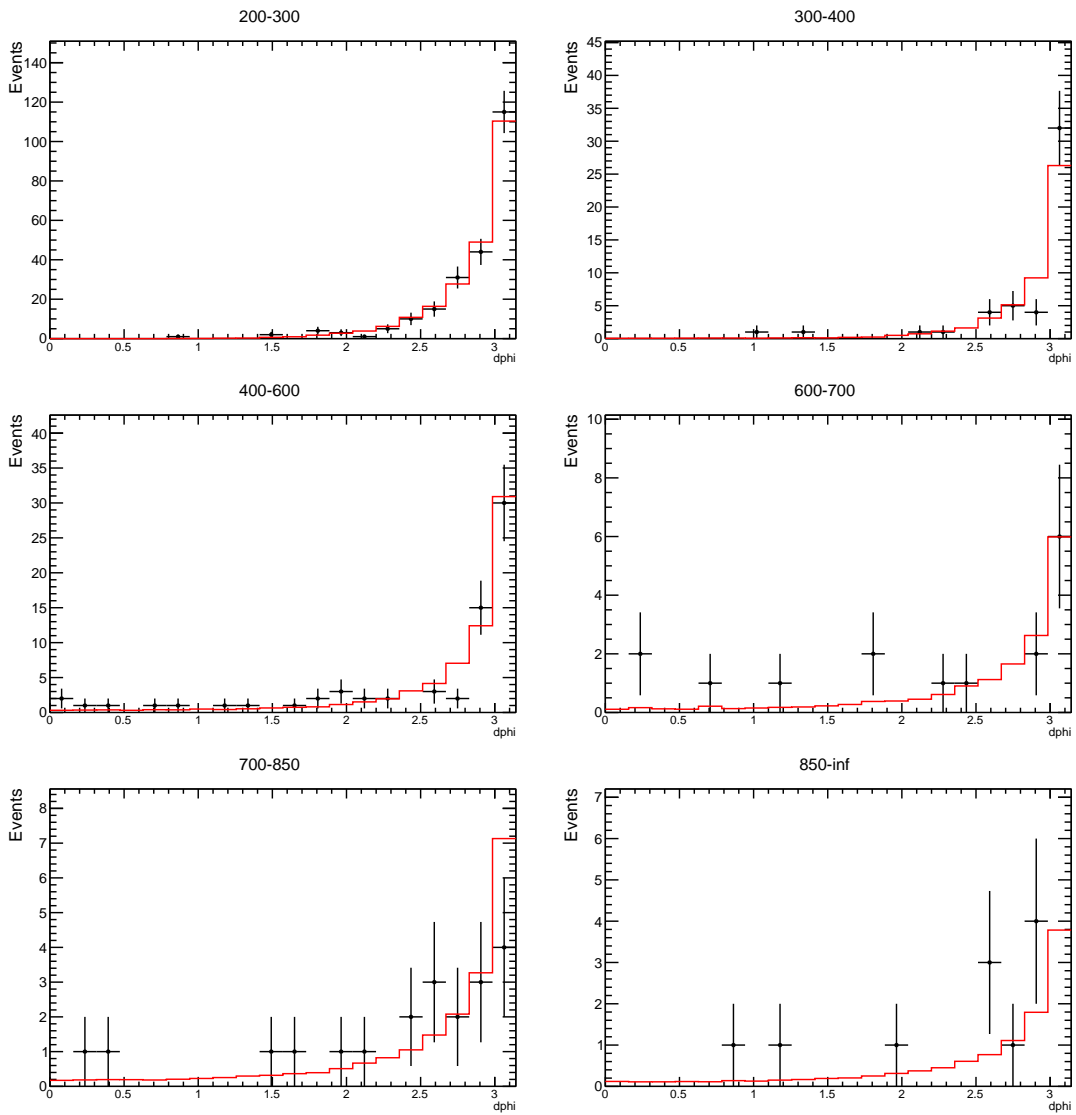


260 3.4.5 Deta

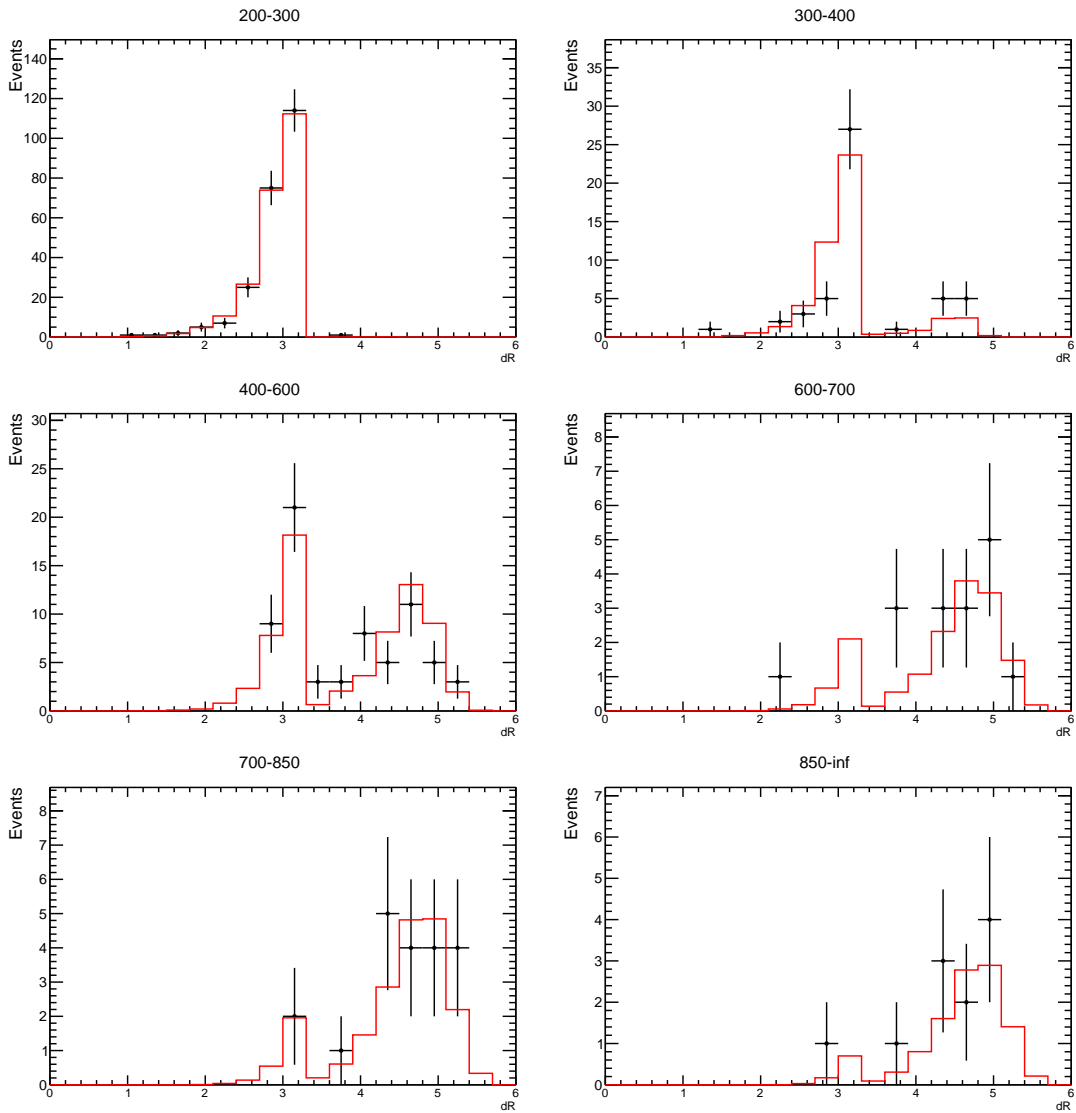




261 3.4.6 Dphi



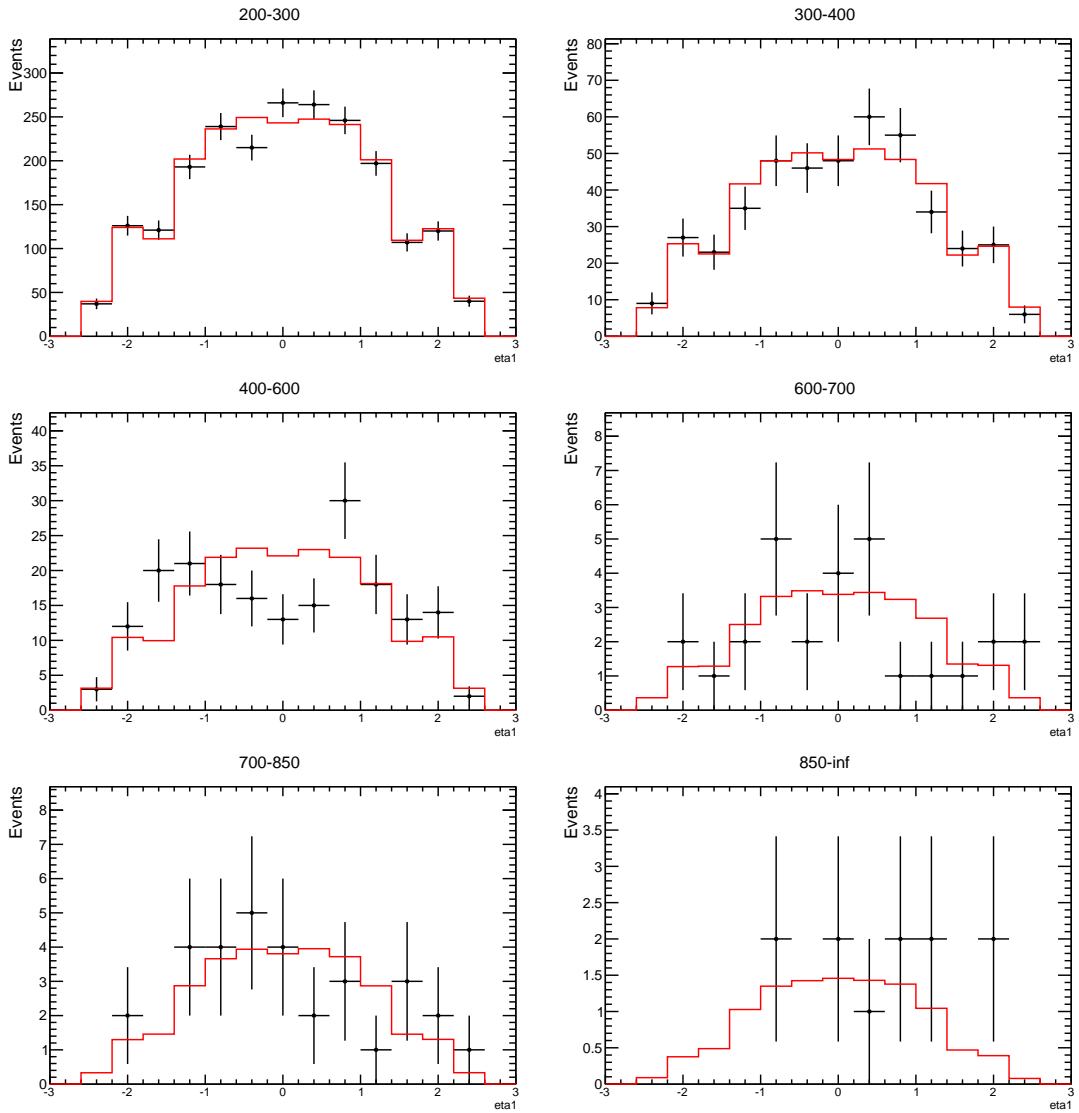
262 3.4.7 DR



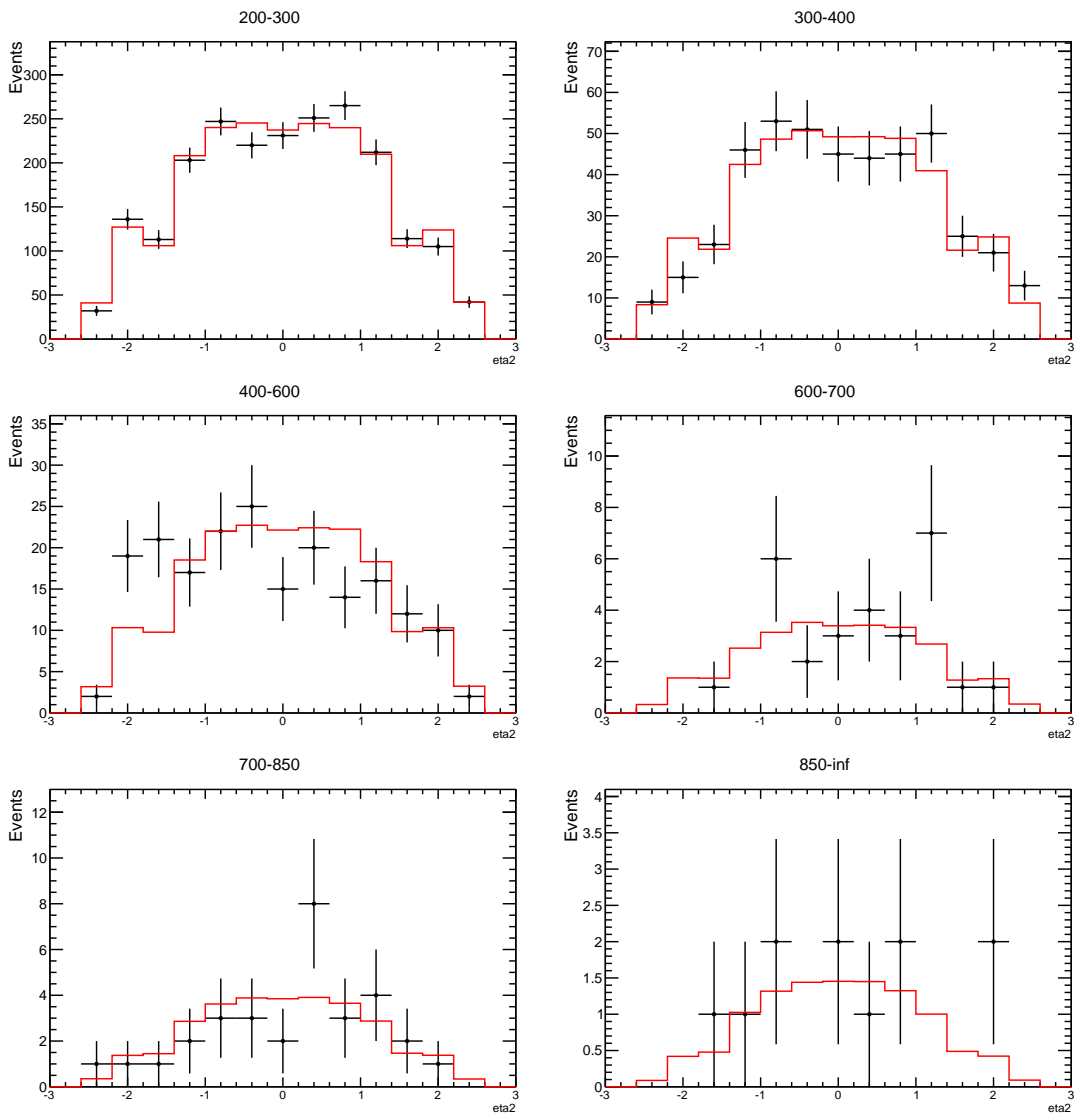
263 **4 Higgs**

264 **4.1 Inclusive**

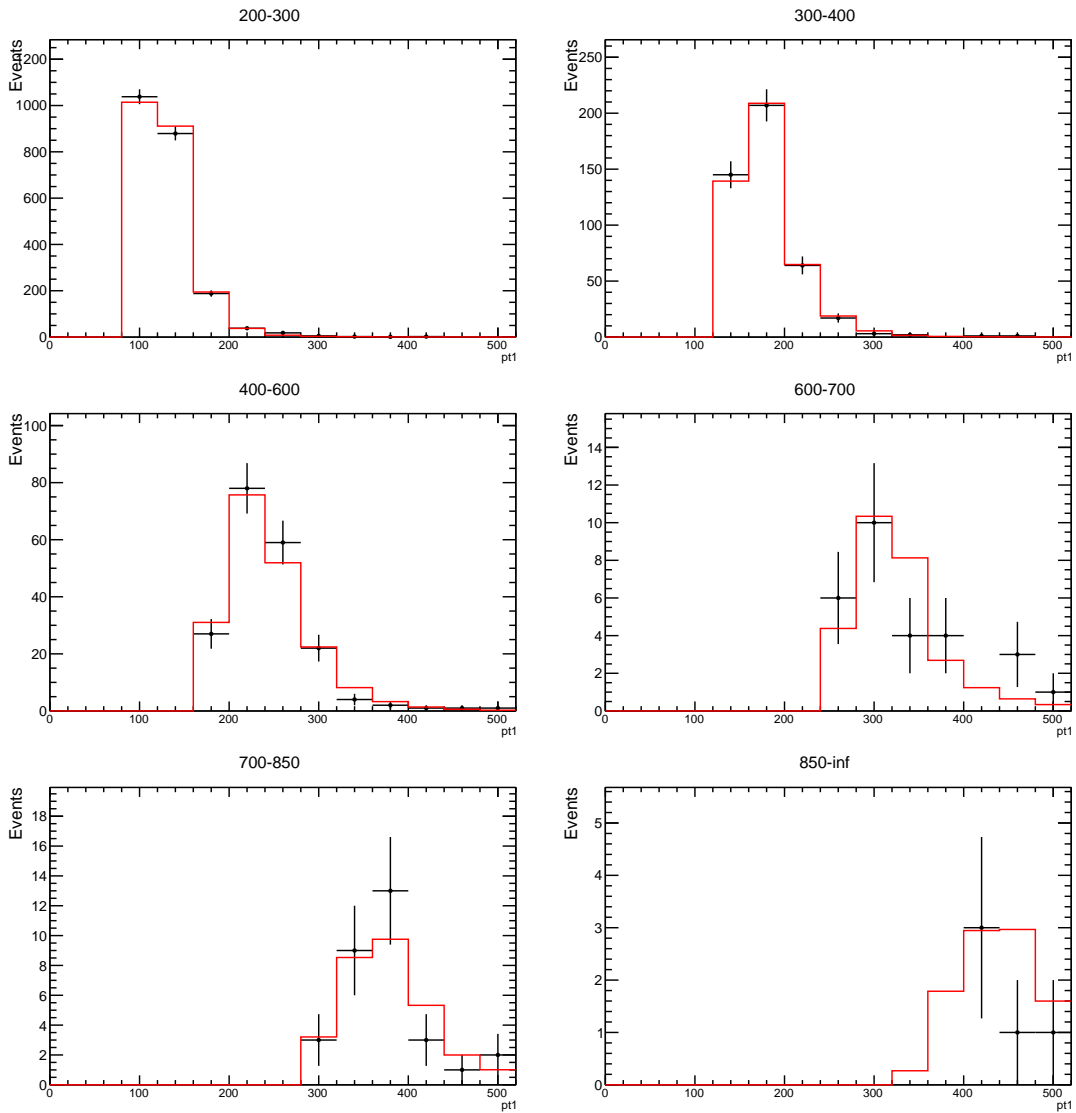
265 **4.1.1 Eta1**



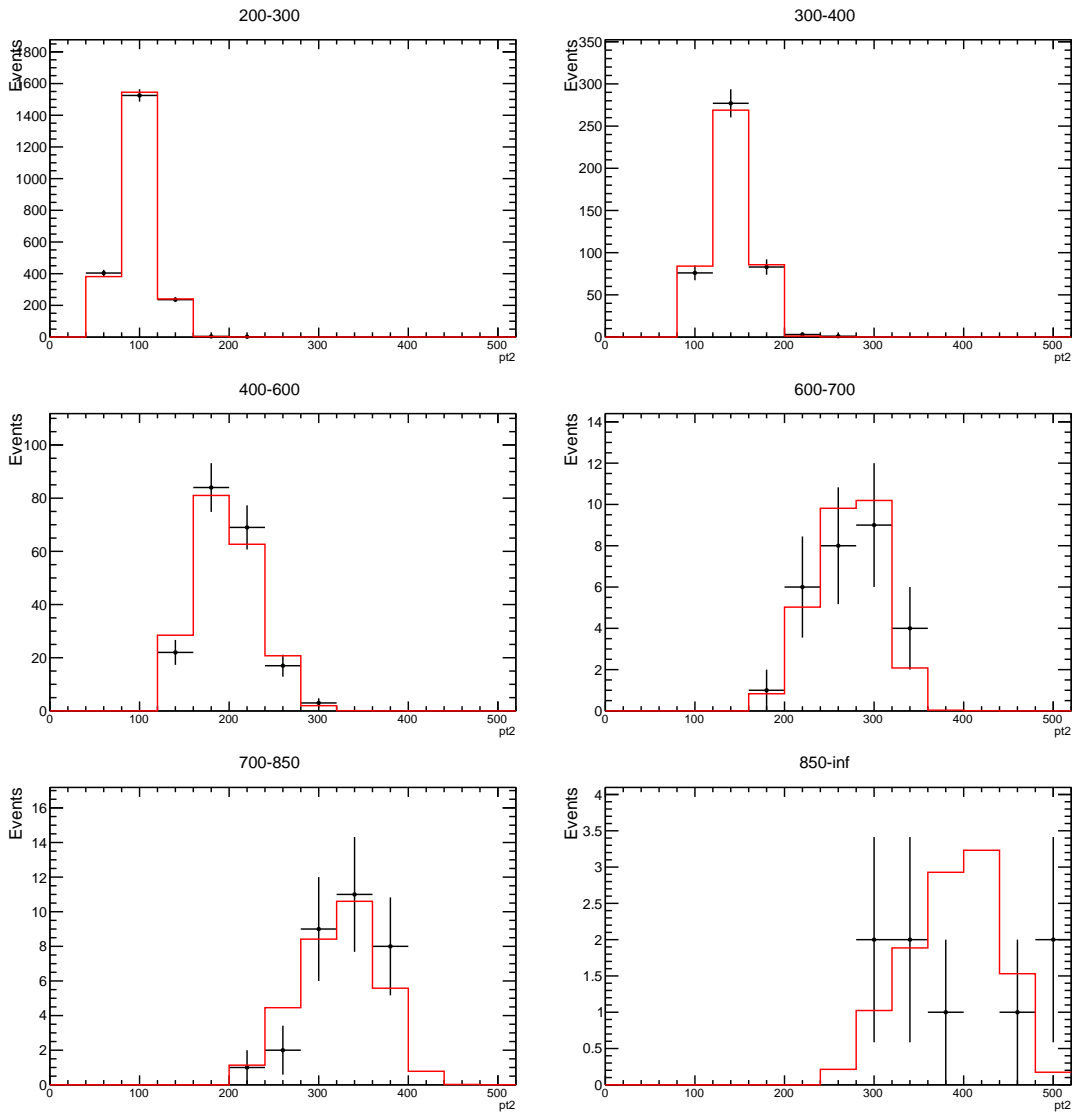
266 4.1.2 Eta2



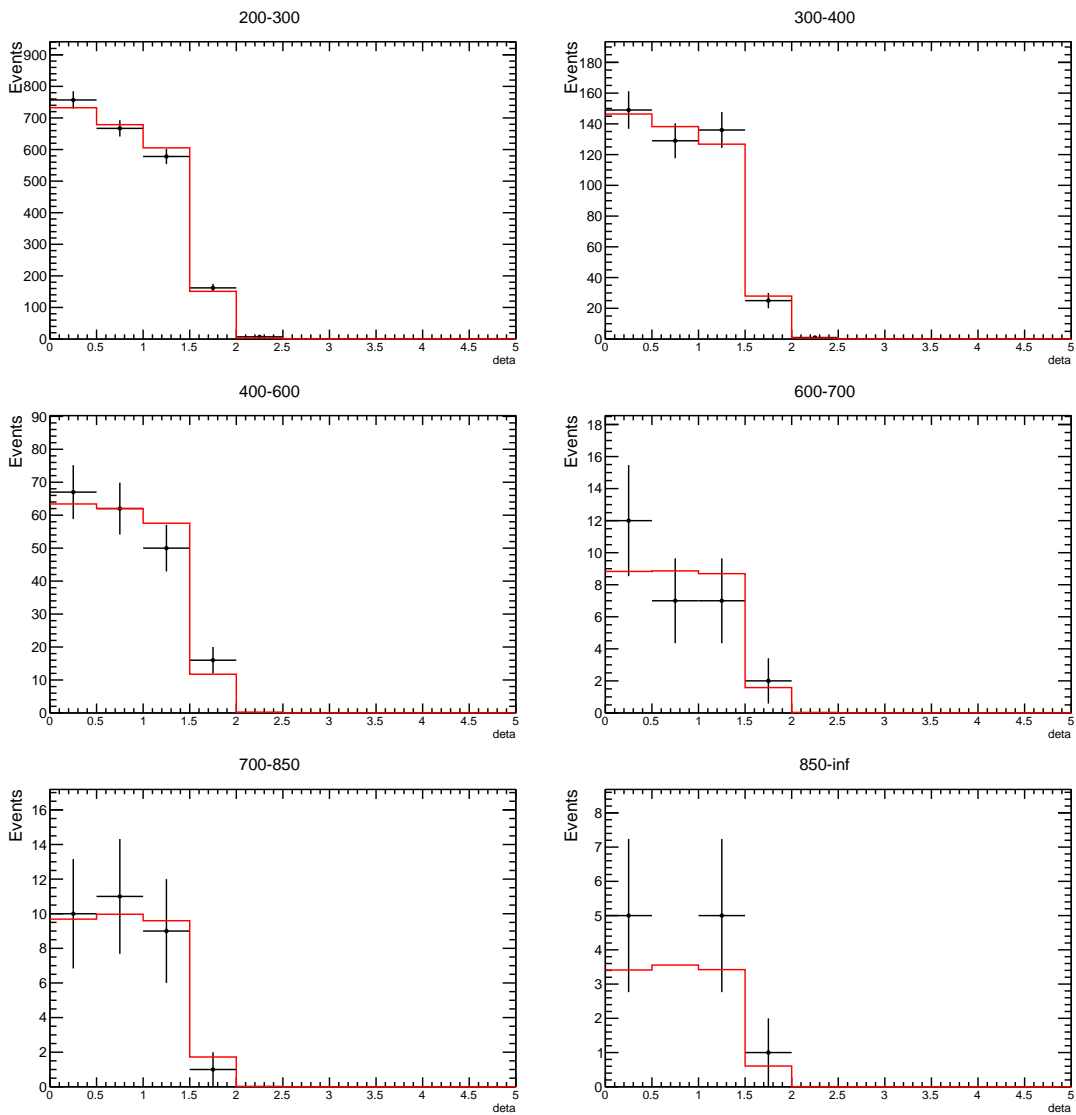
267 4.1.3 Pt1



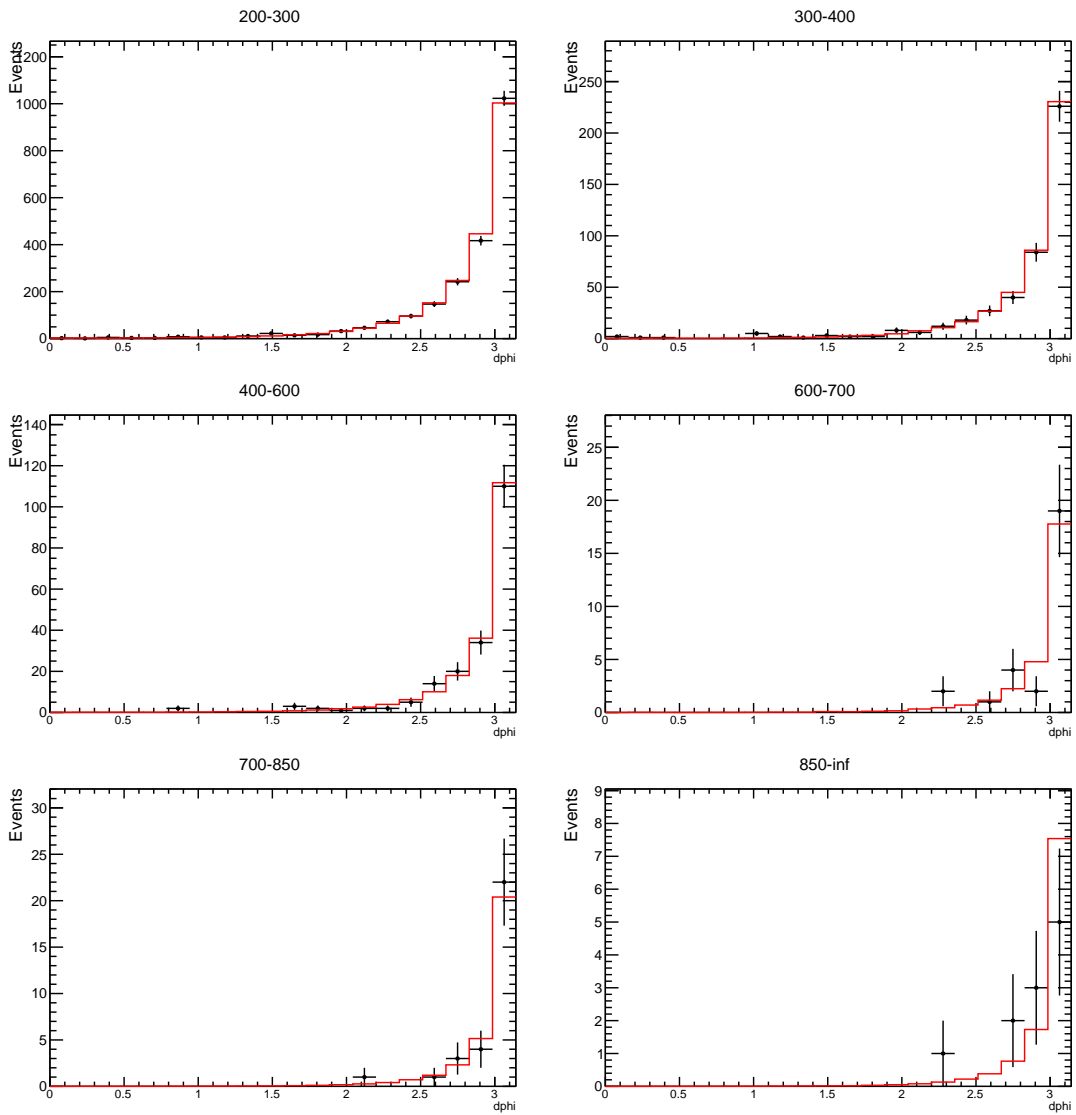
268 4.1.4 Pt2



269 4.1.5 Deta

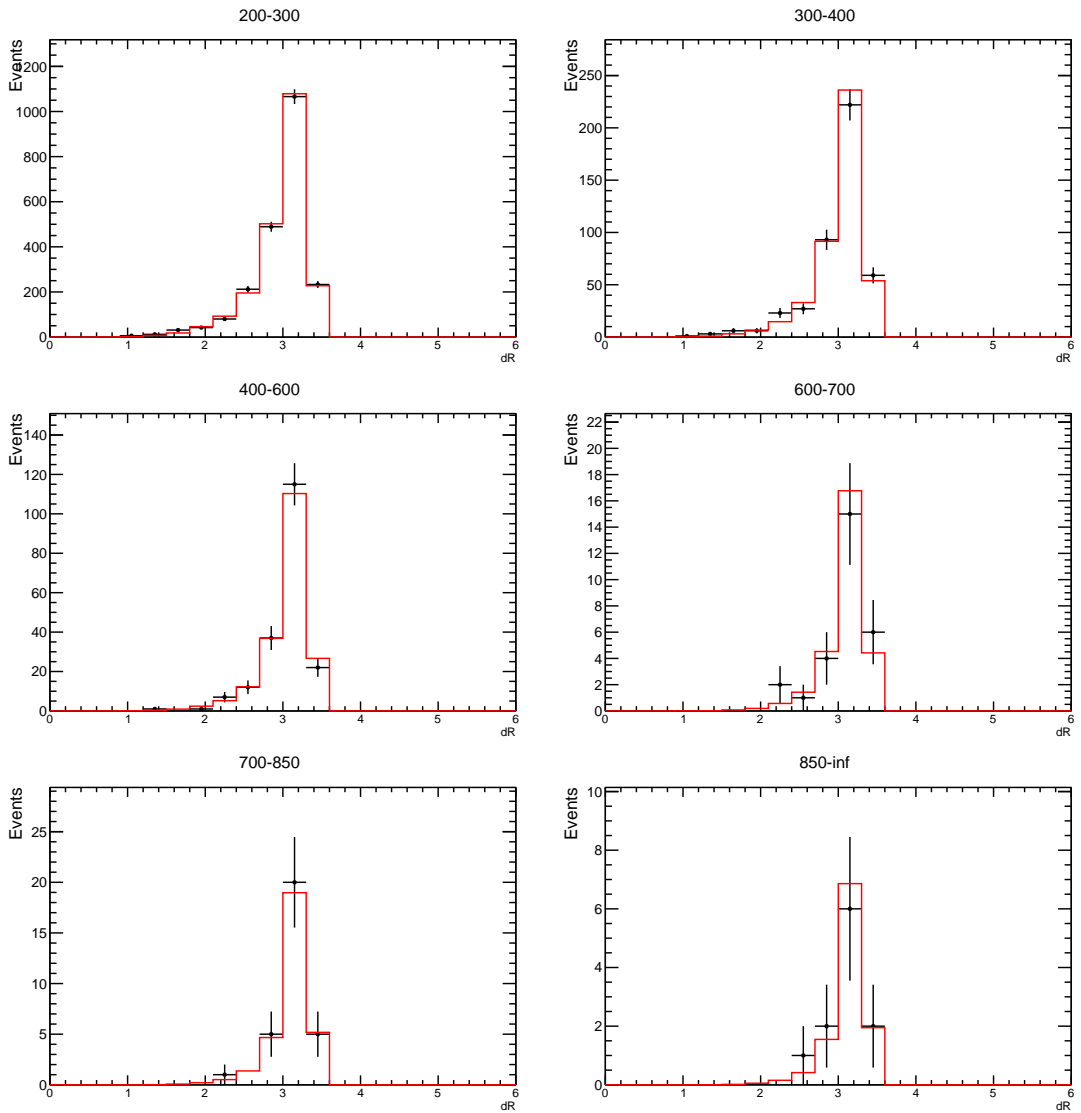


270 4.1.6 Dphi



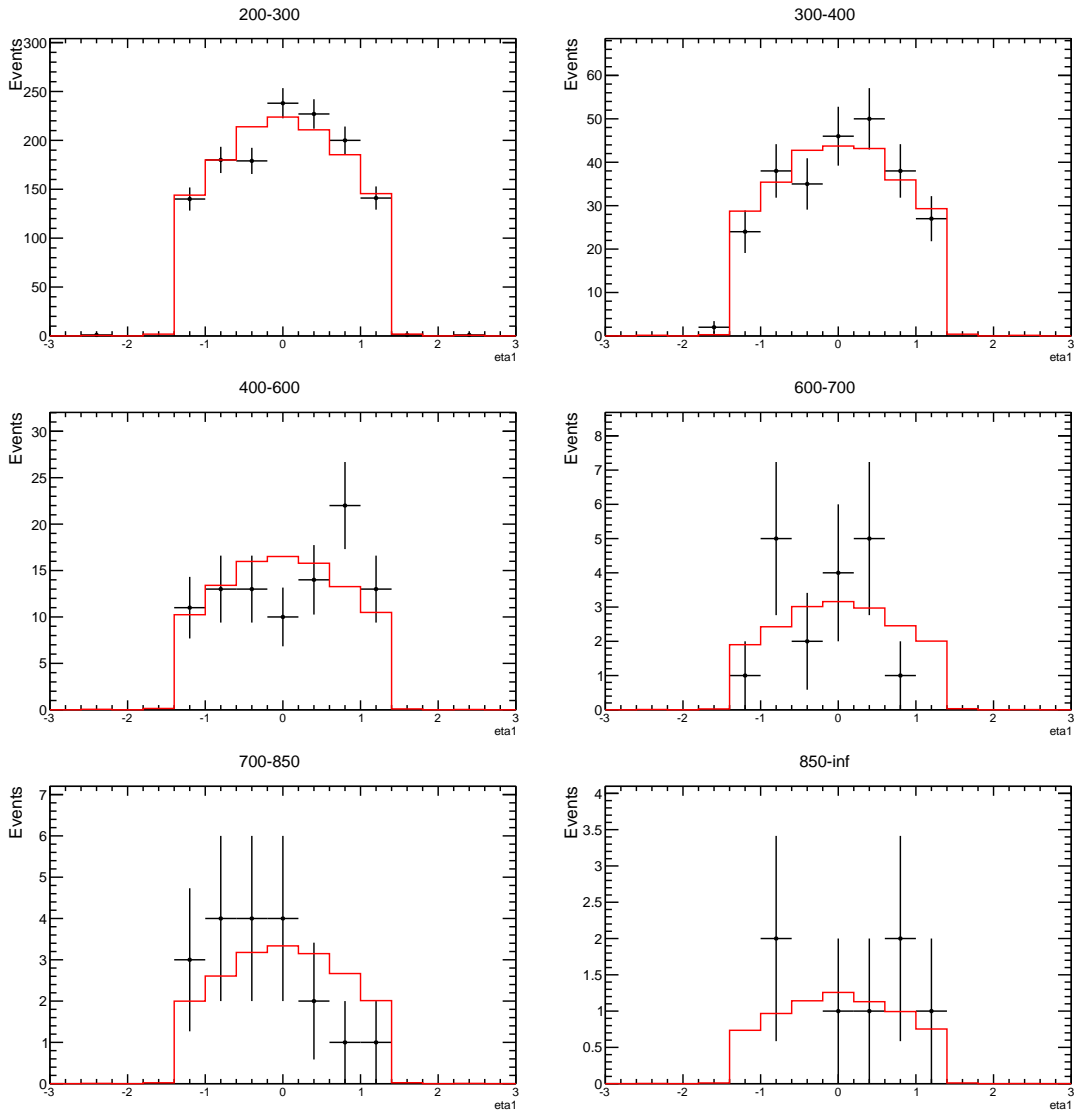


271 4.1.7 DR

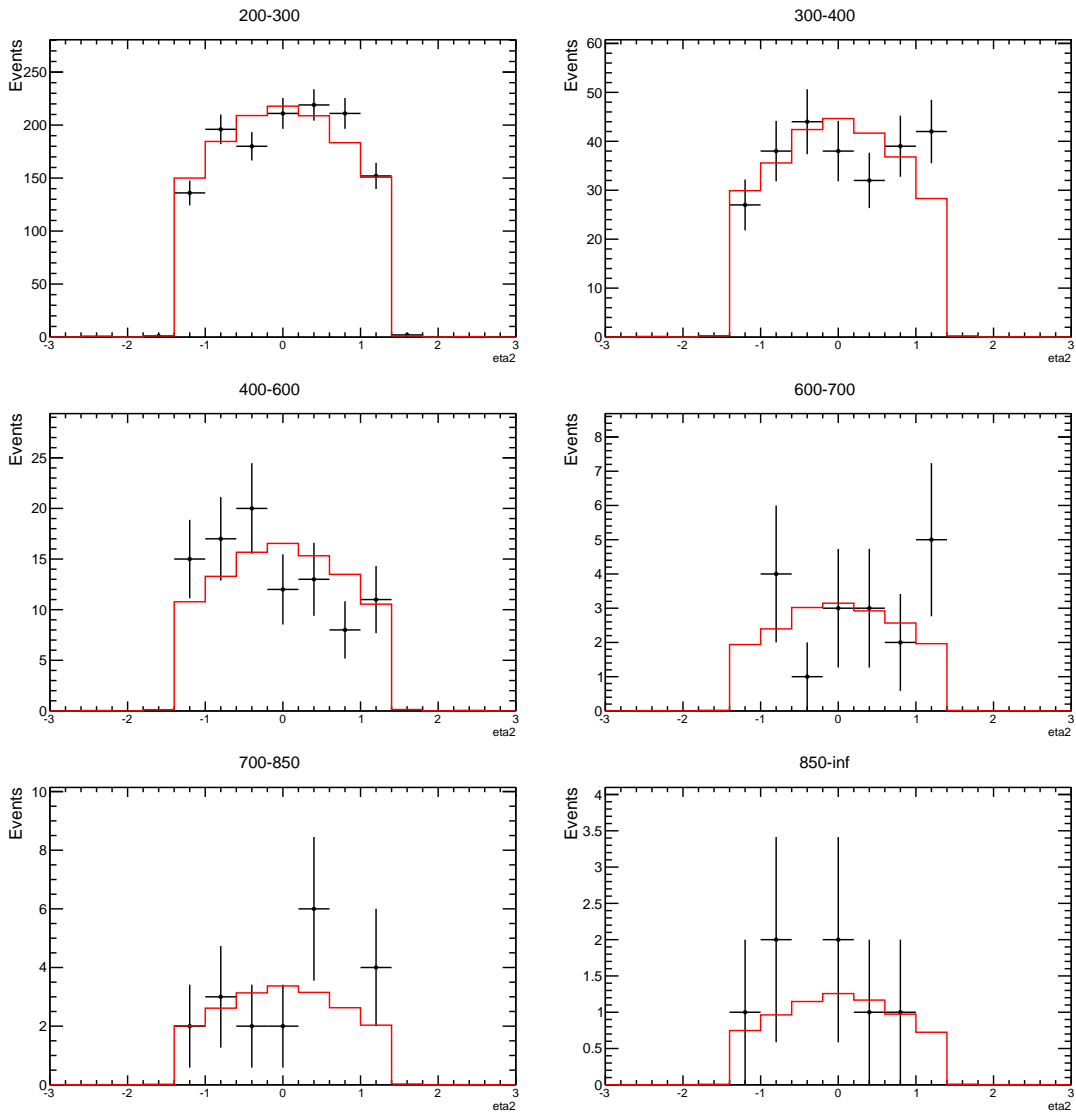


272 4.2 BB

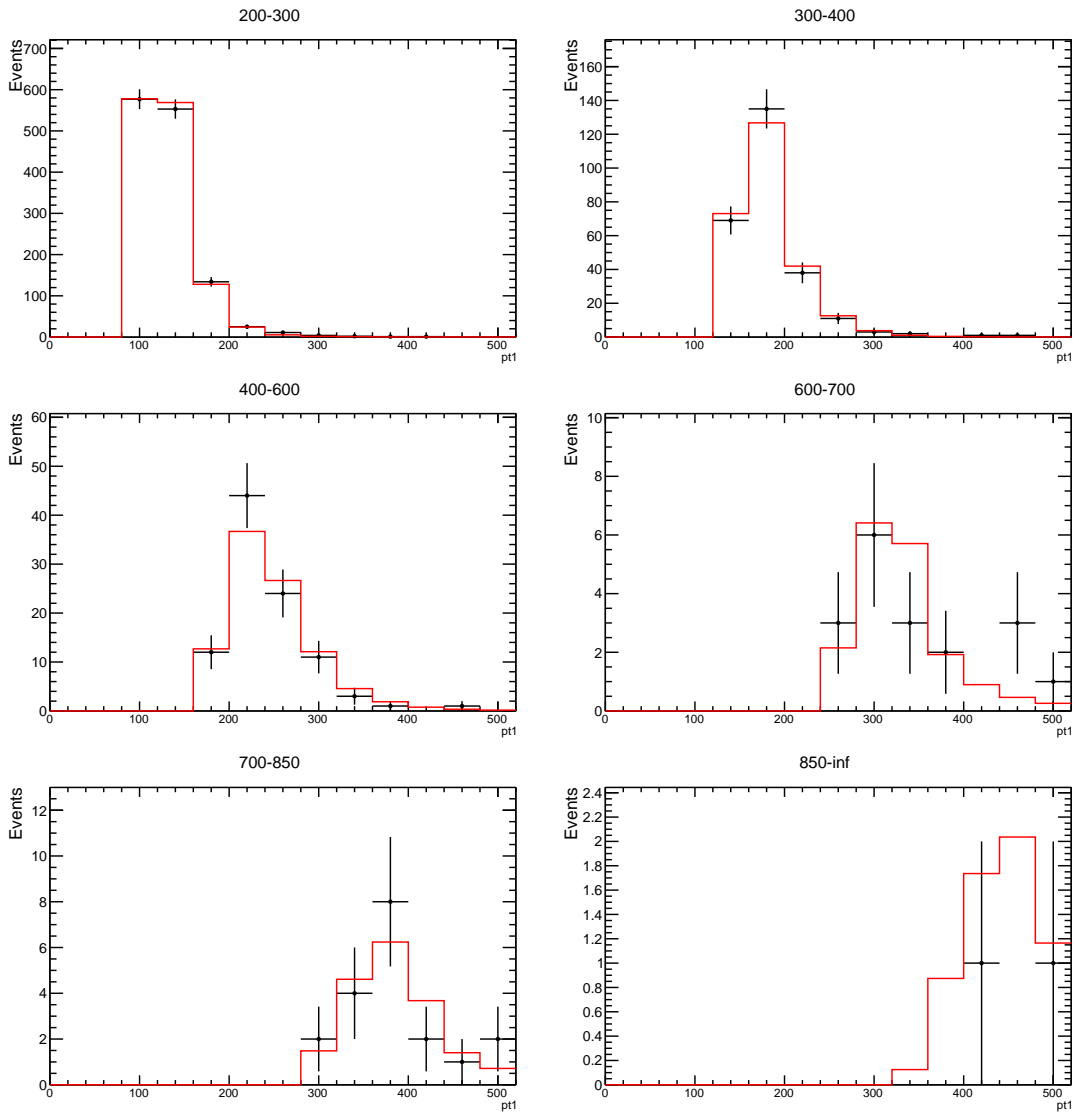
273 4.2.1 Eta1



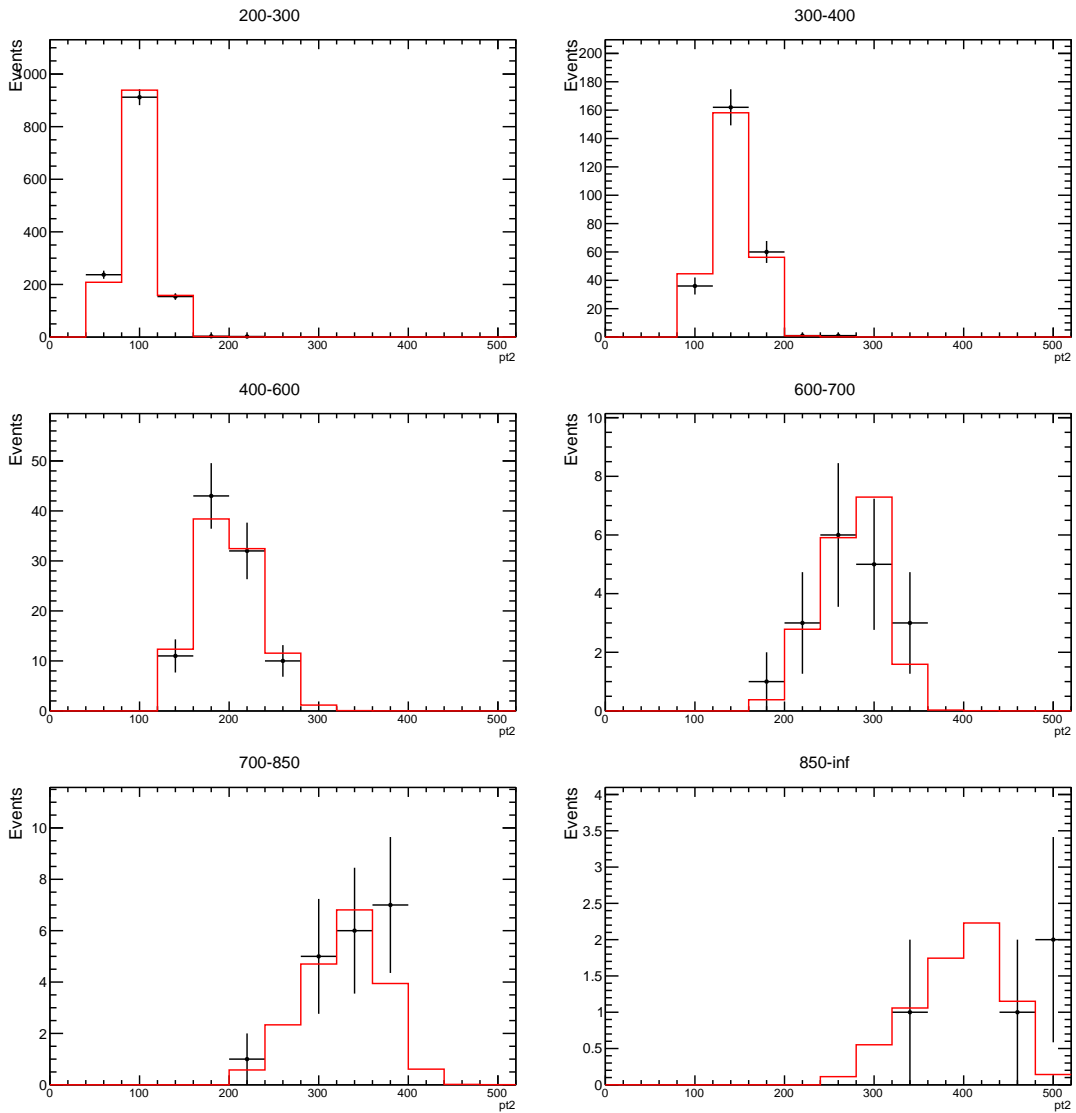
274 4.2.2 Eta2



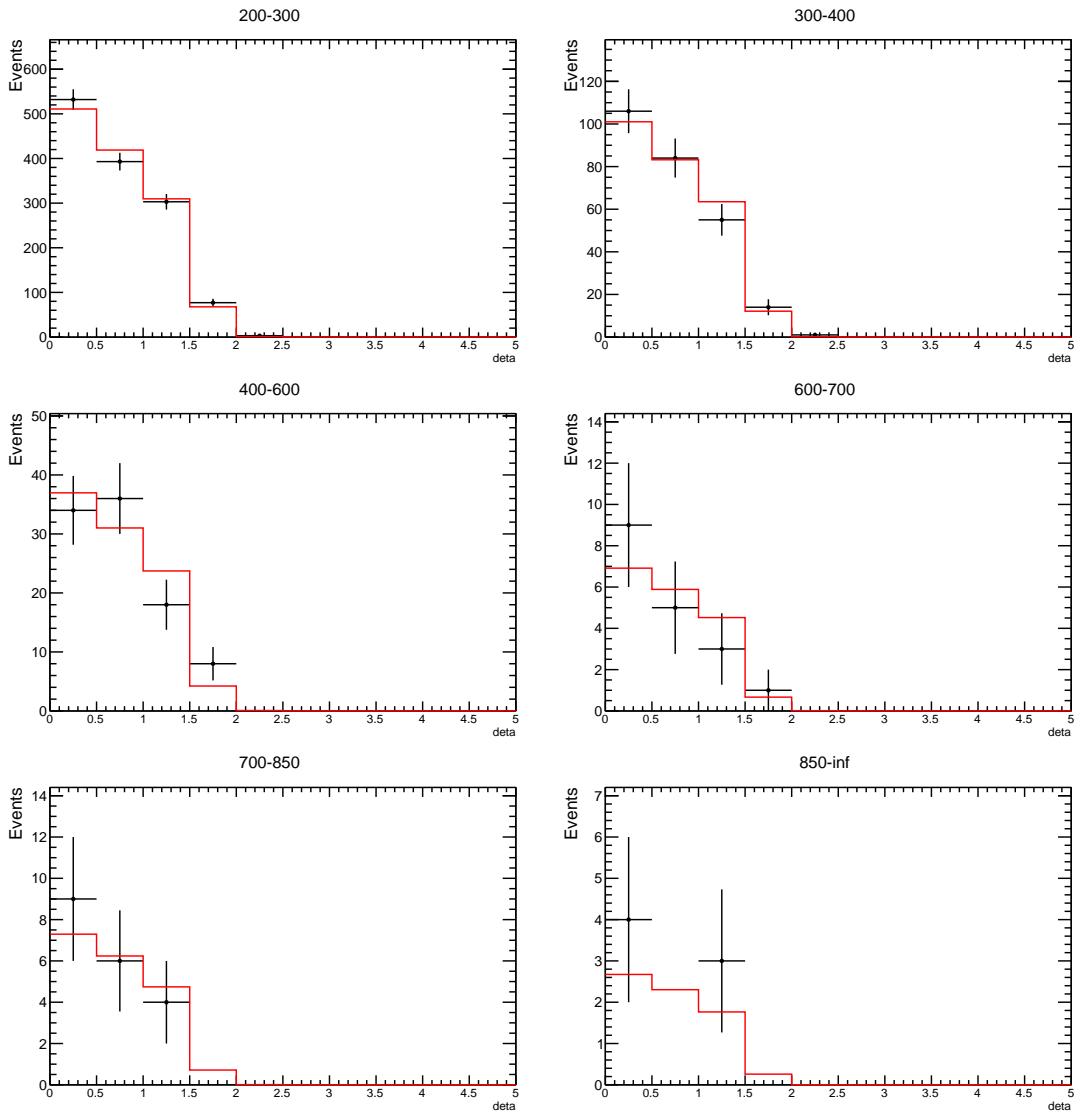
275 4.2.3 Pt1



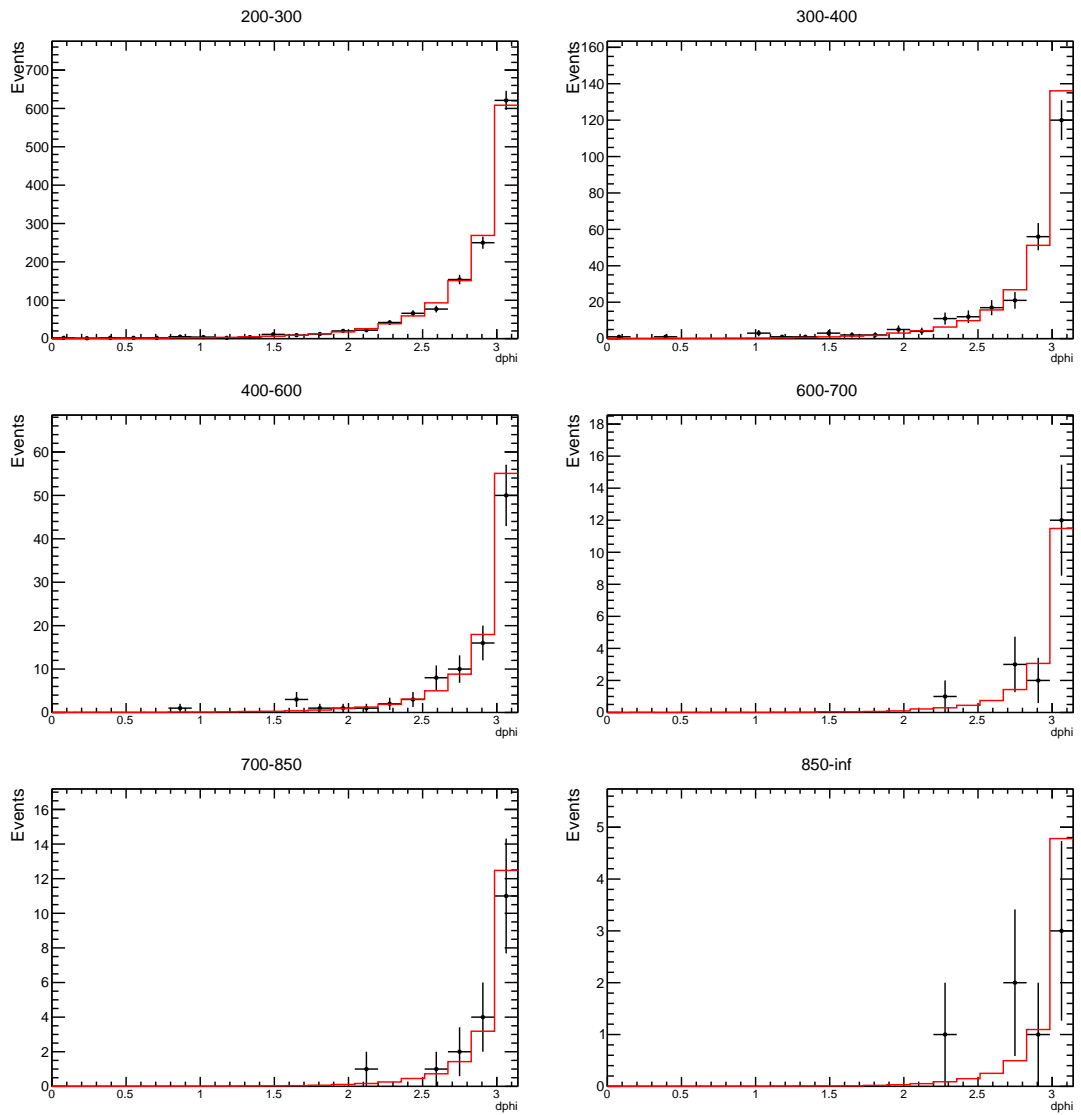
276 **4.2.4 Pt2**



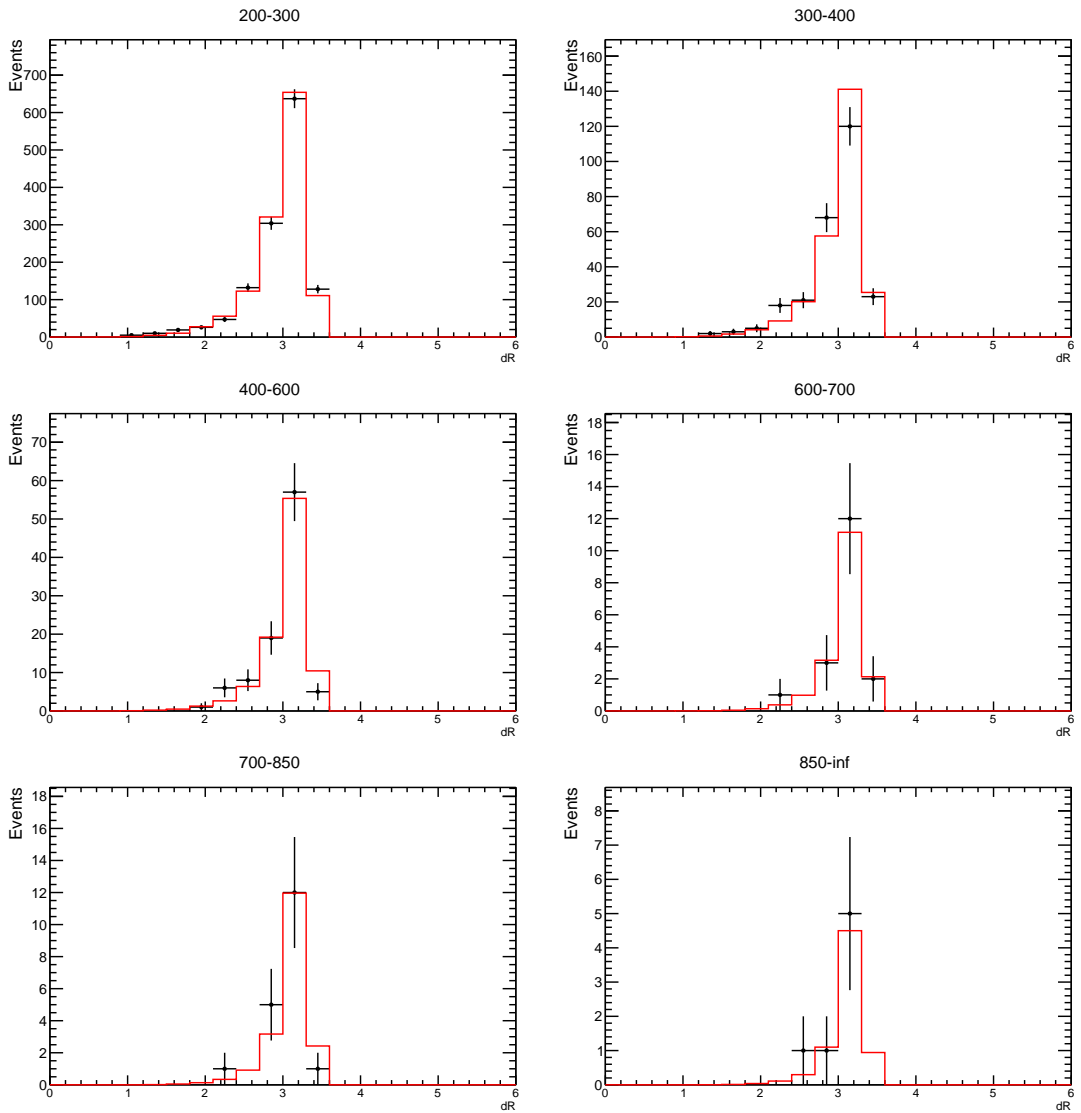
277 4.2.5 Deta



278 4.2.6 Dphi



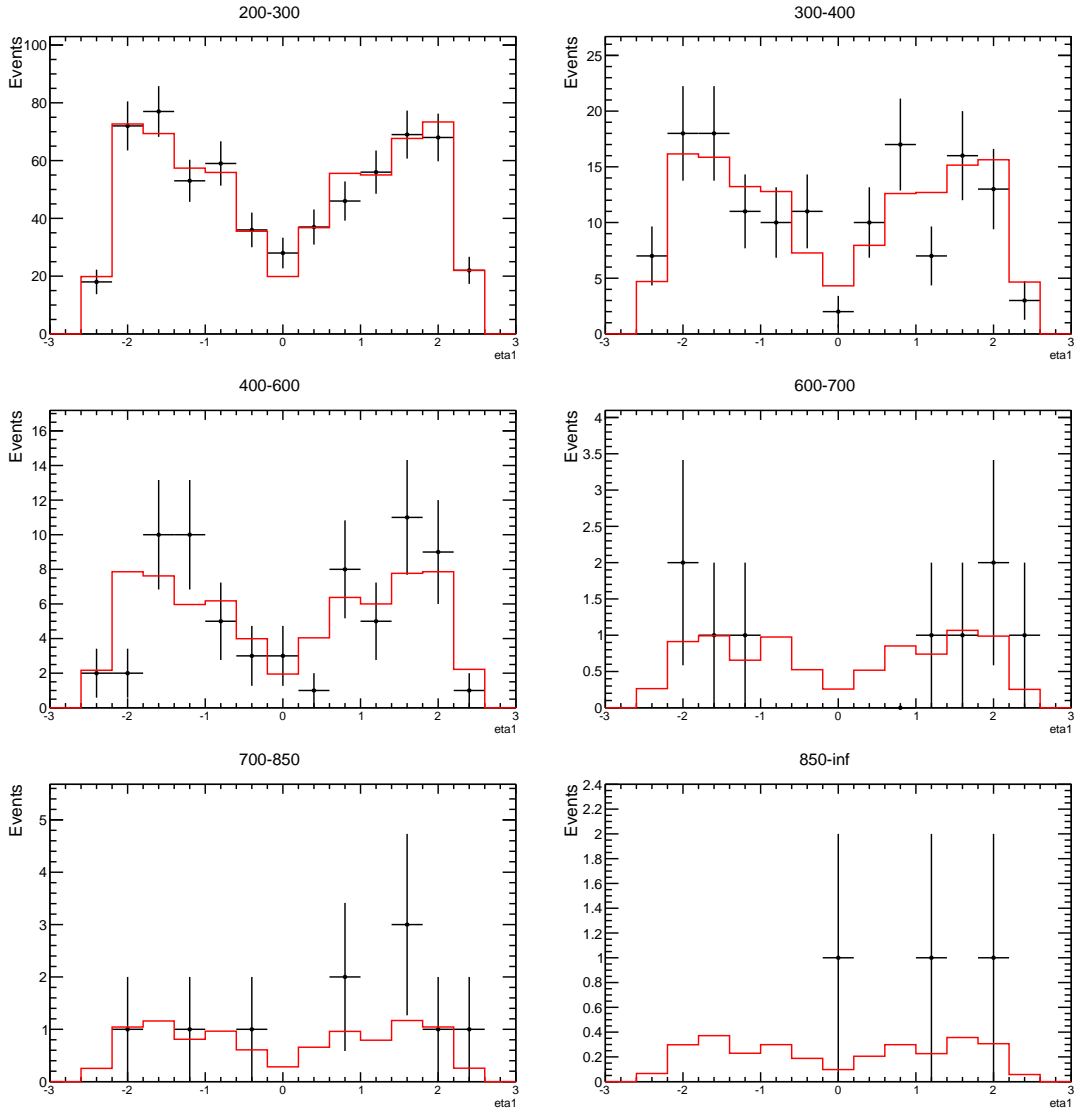
279 4.2.7 DR



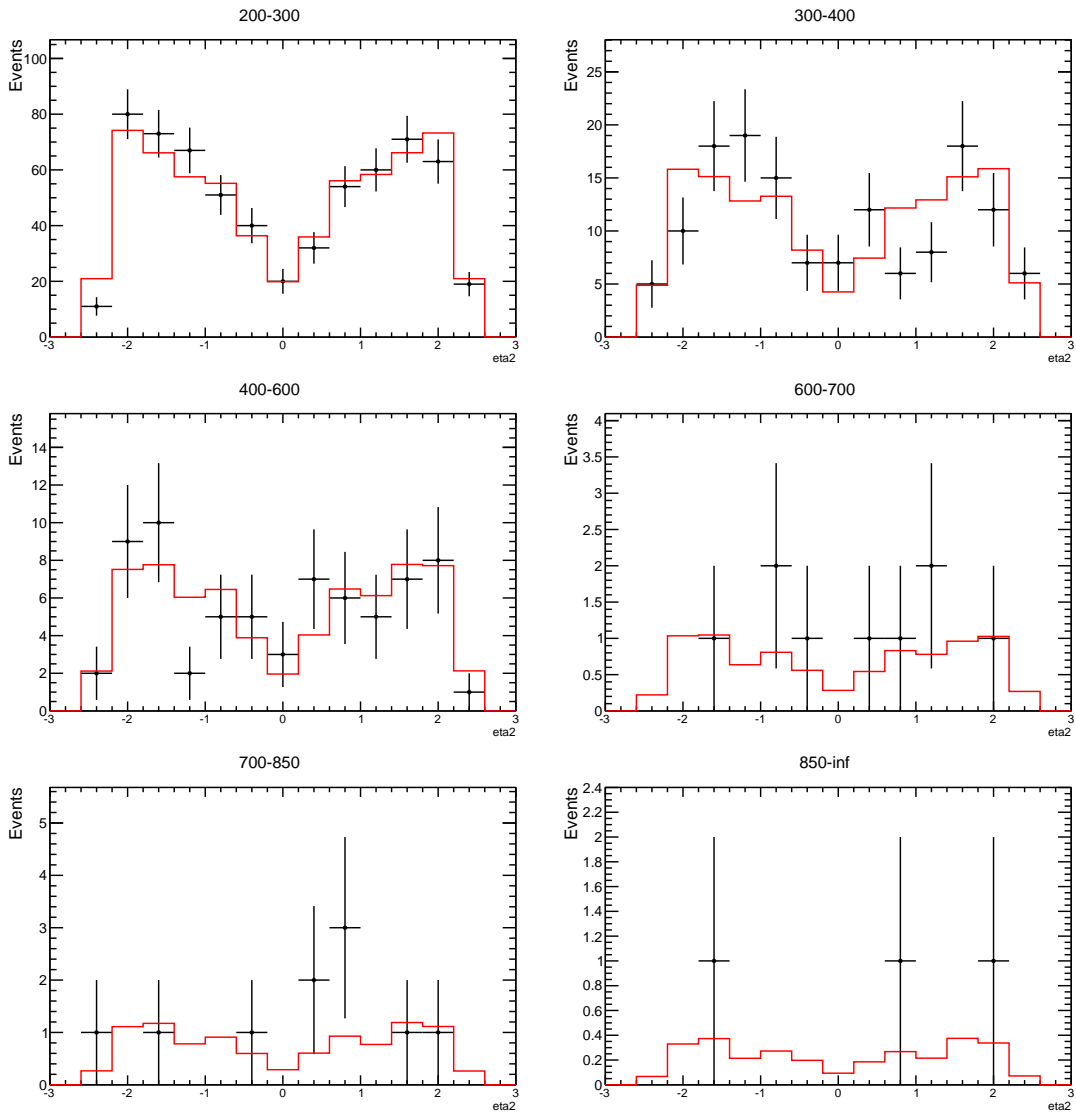


280 **4.3 BEEB**

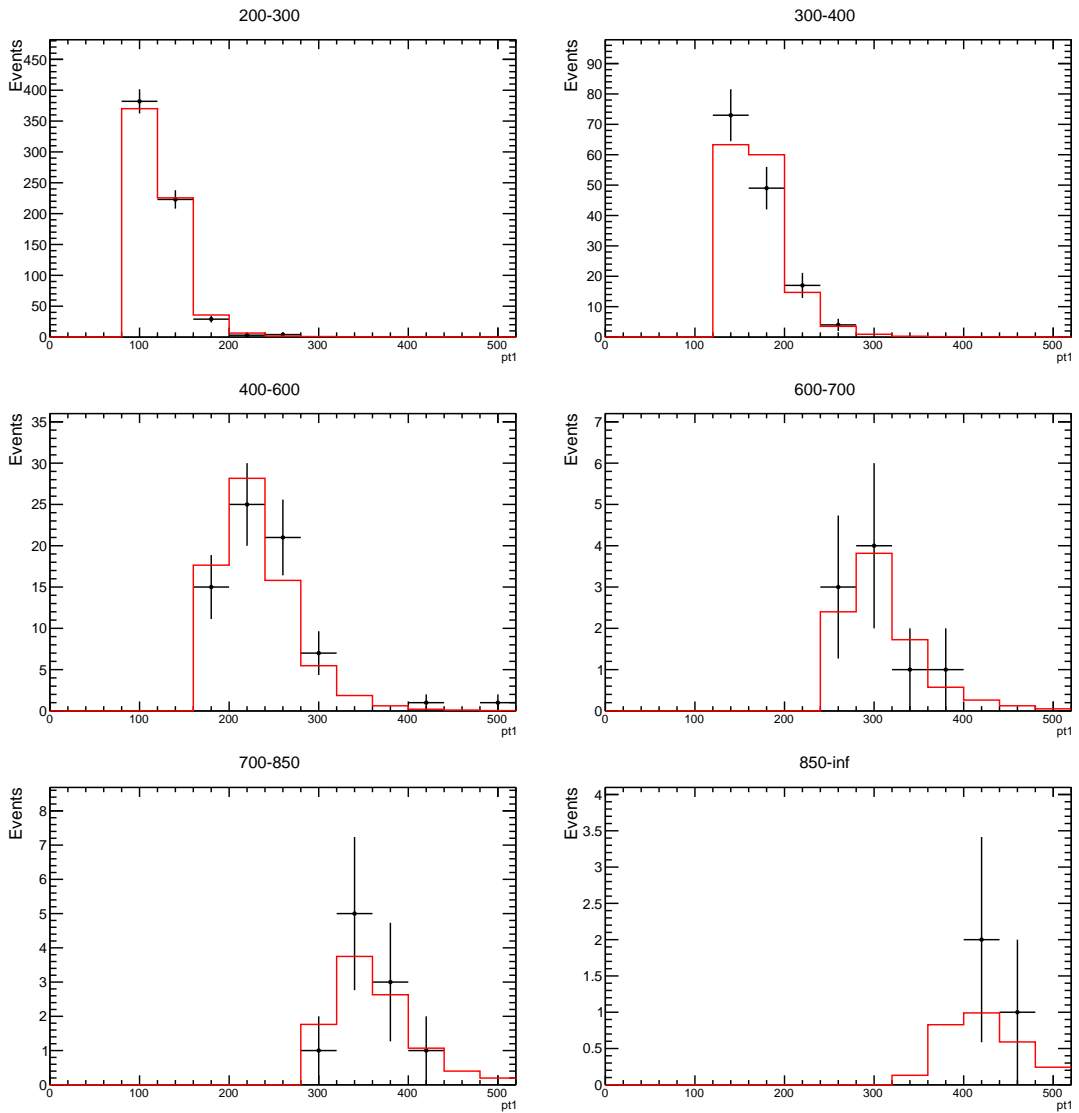
281 **4.3.1 Eta1**



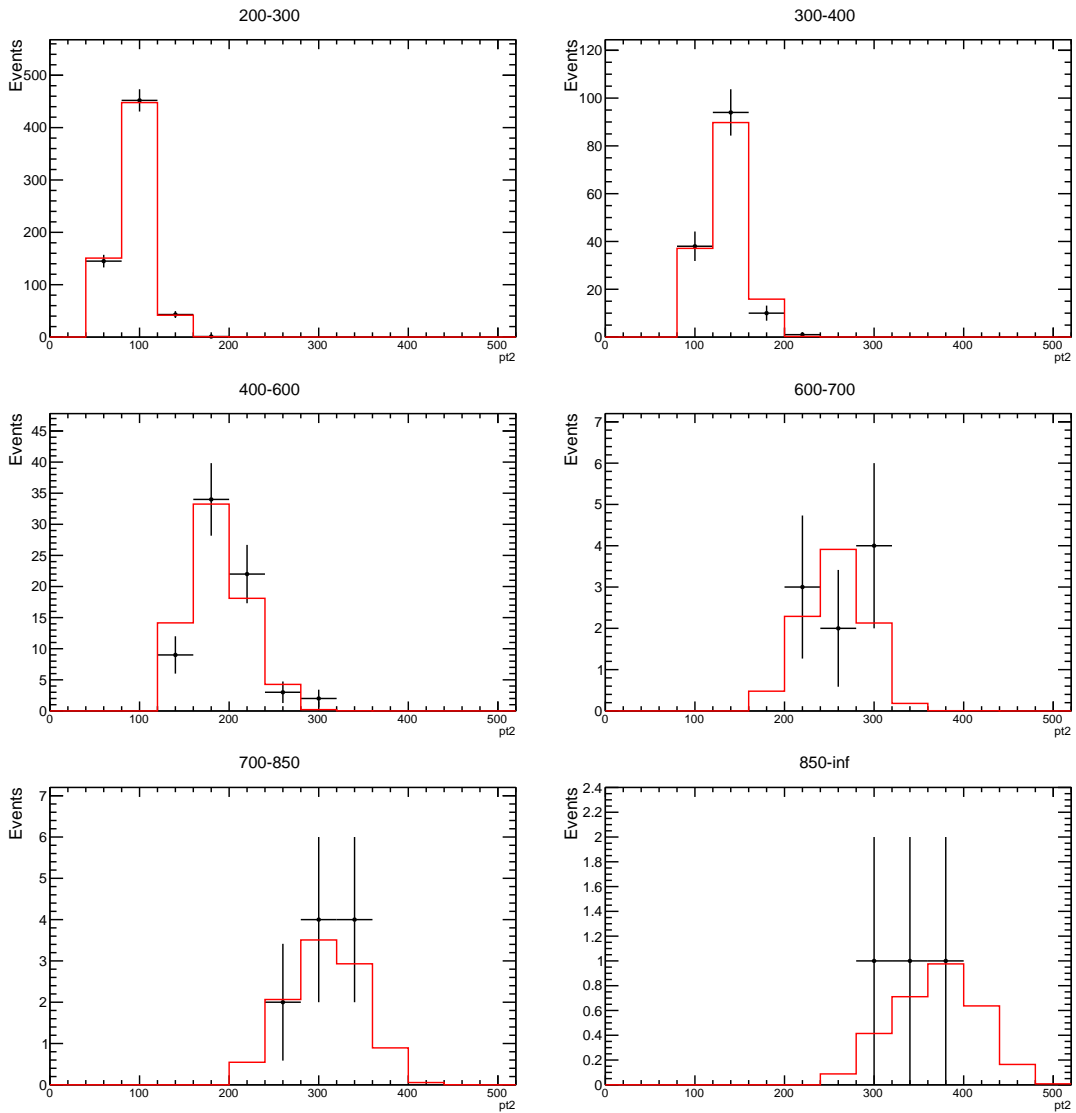
282 4.3.2 Eta2



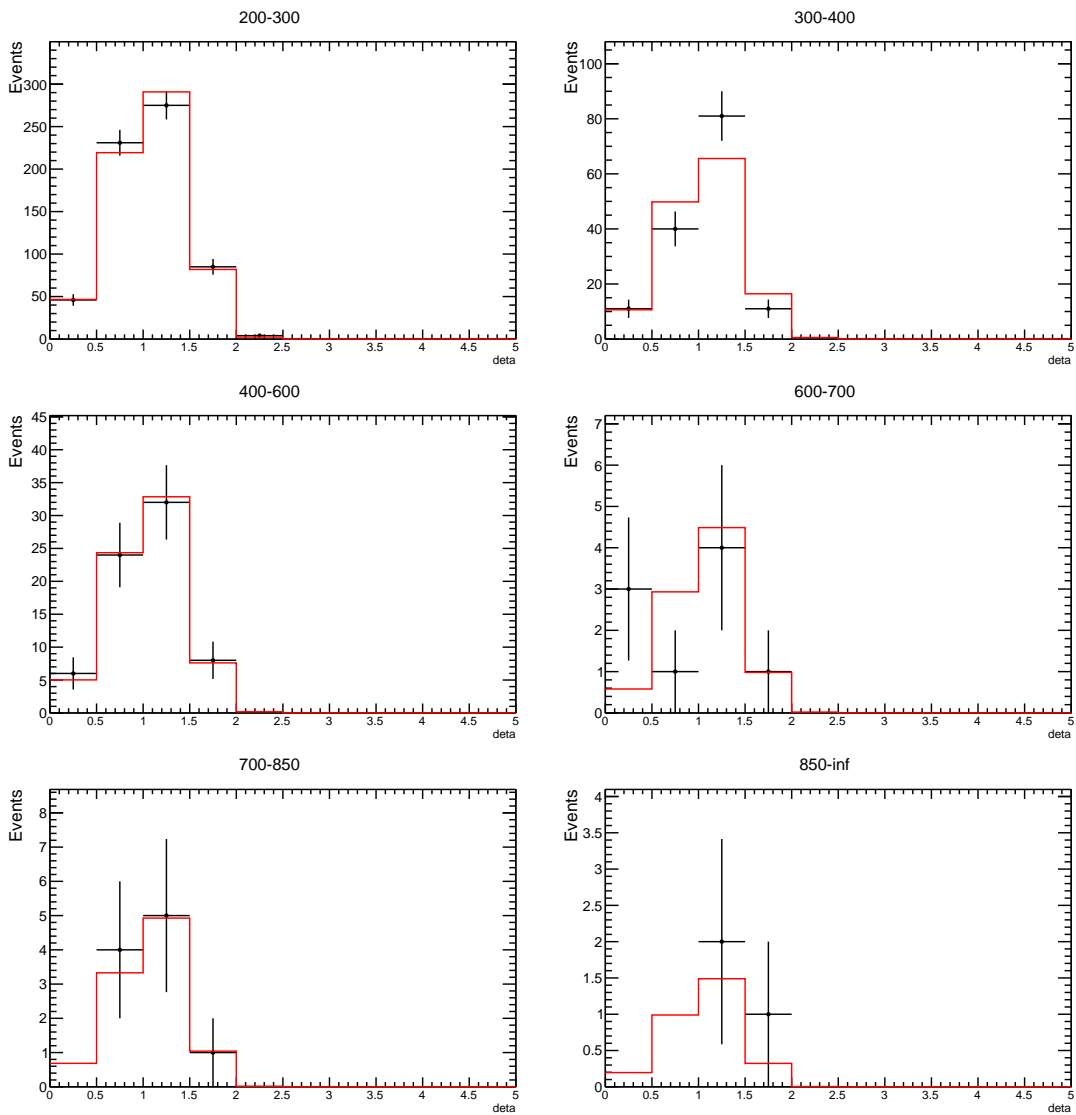
283 4.3.3 Pt1



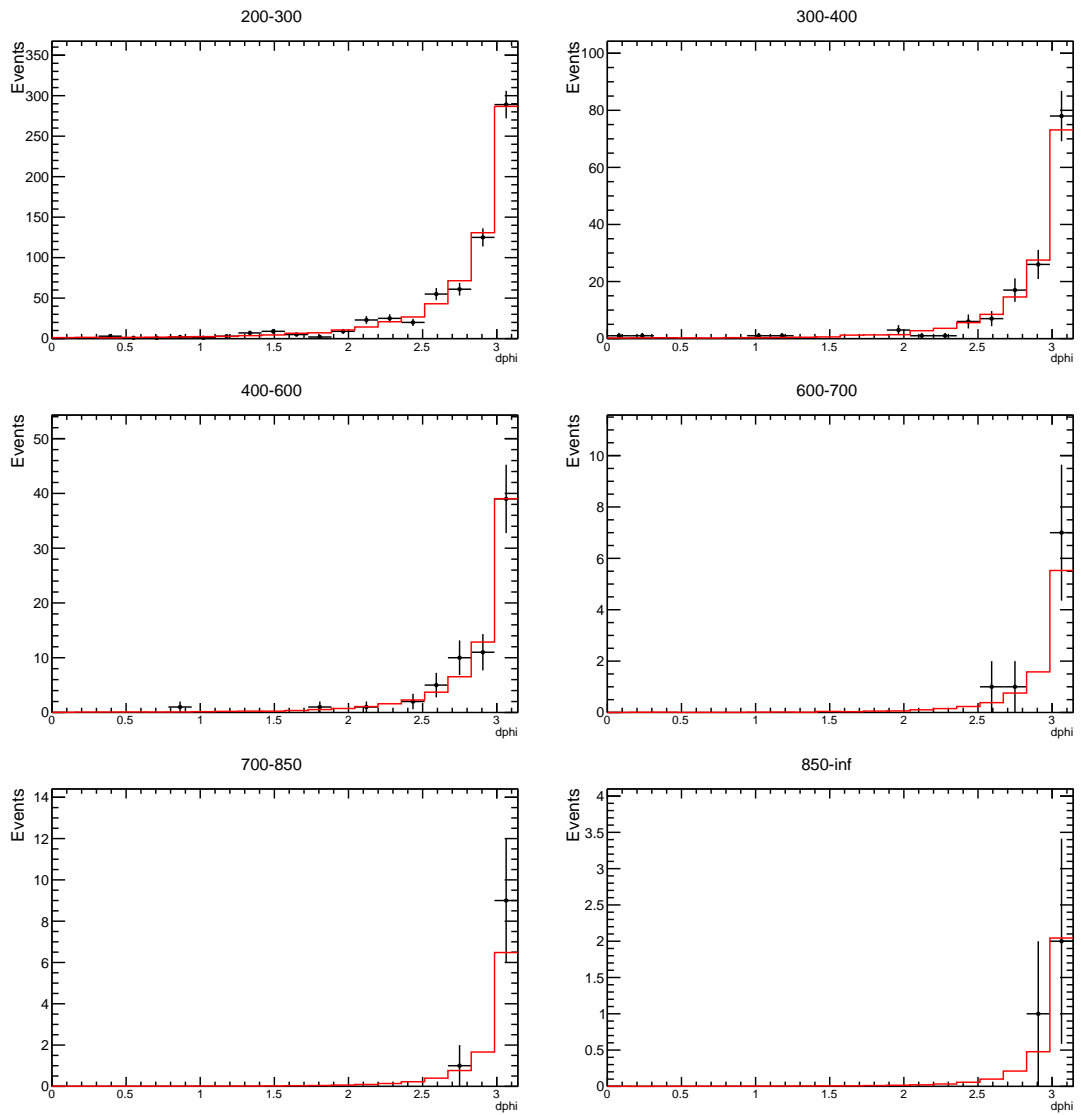
284 4.3.4 Pt2



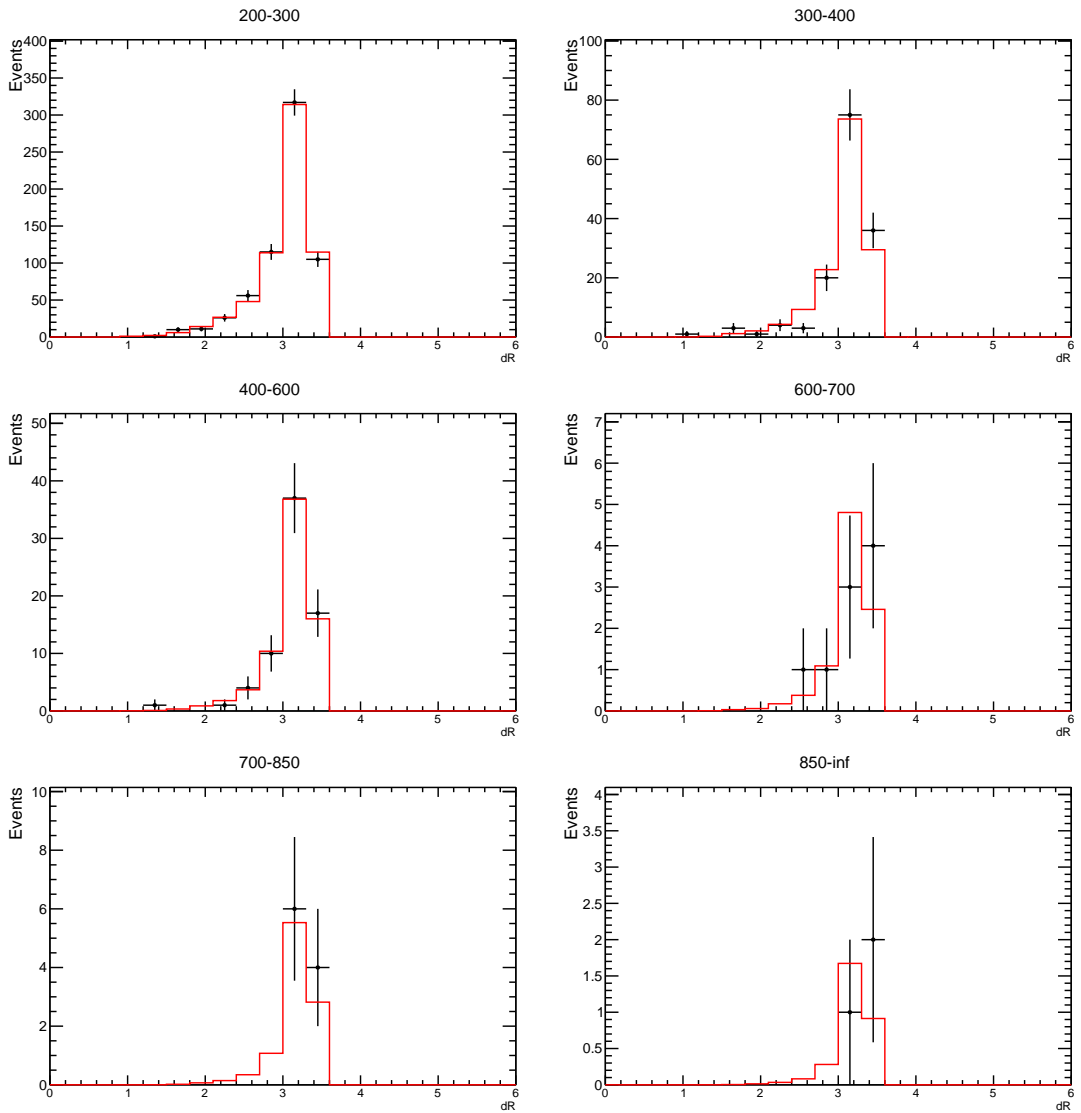
285 4.3.5 Deta

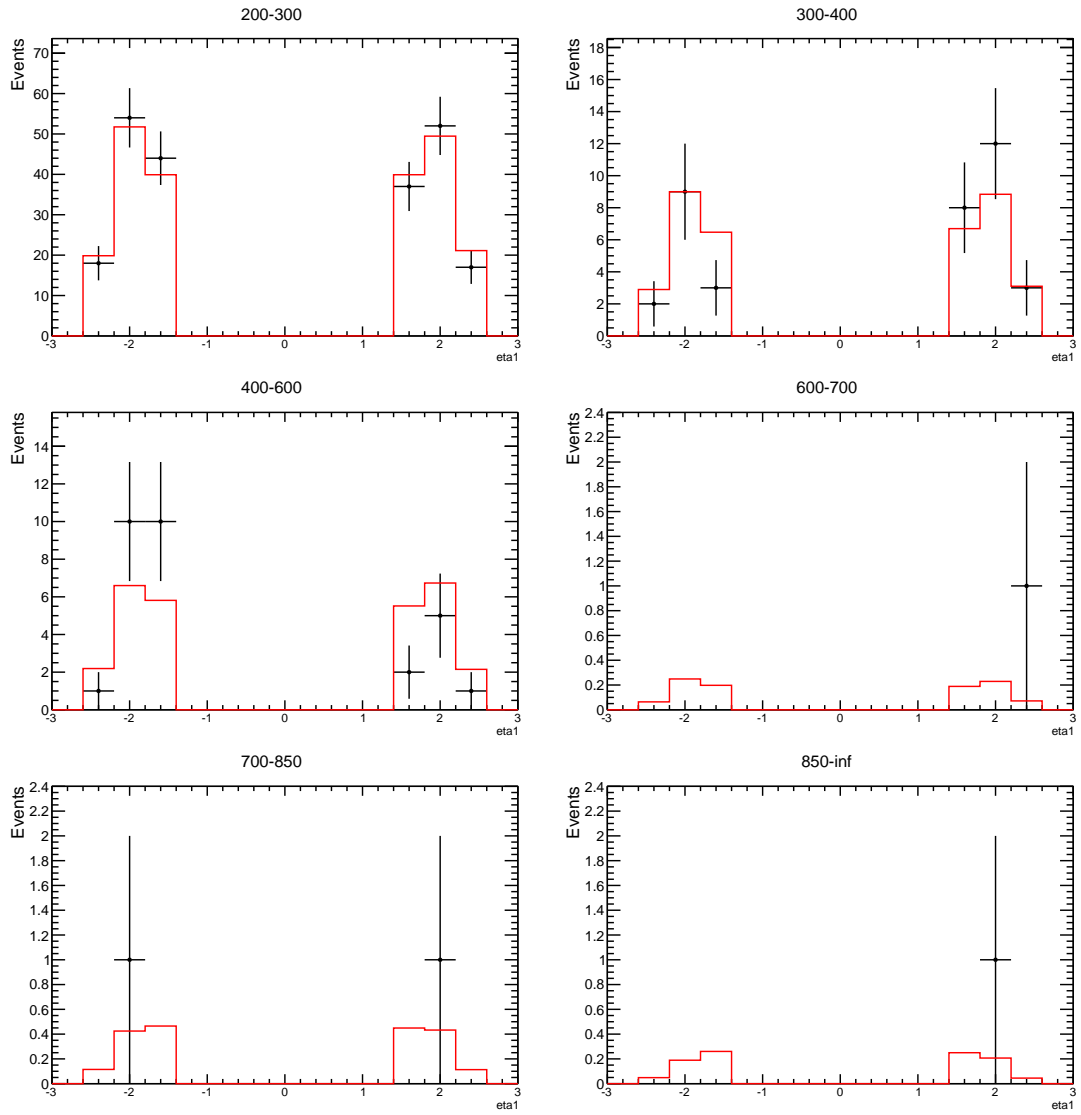


286 4.3.6 Dphi



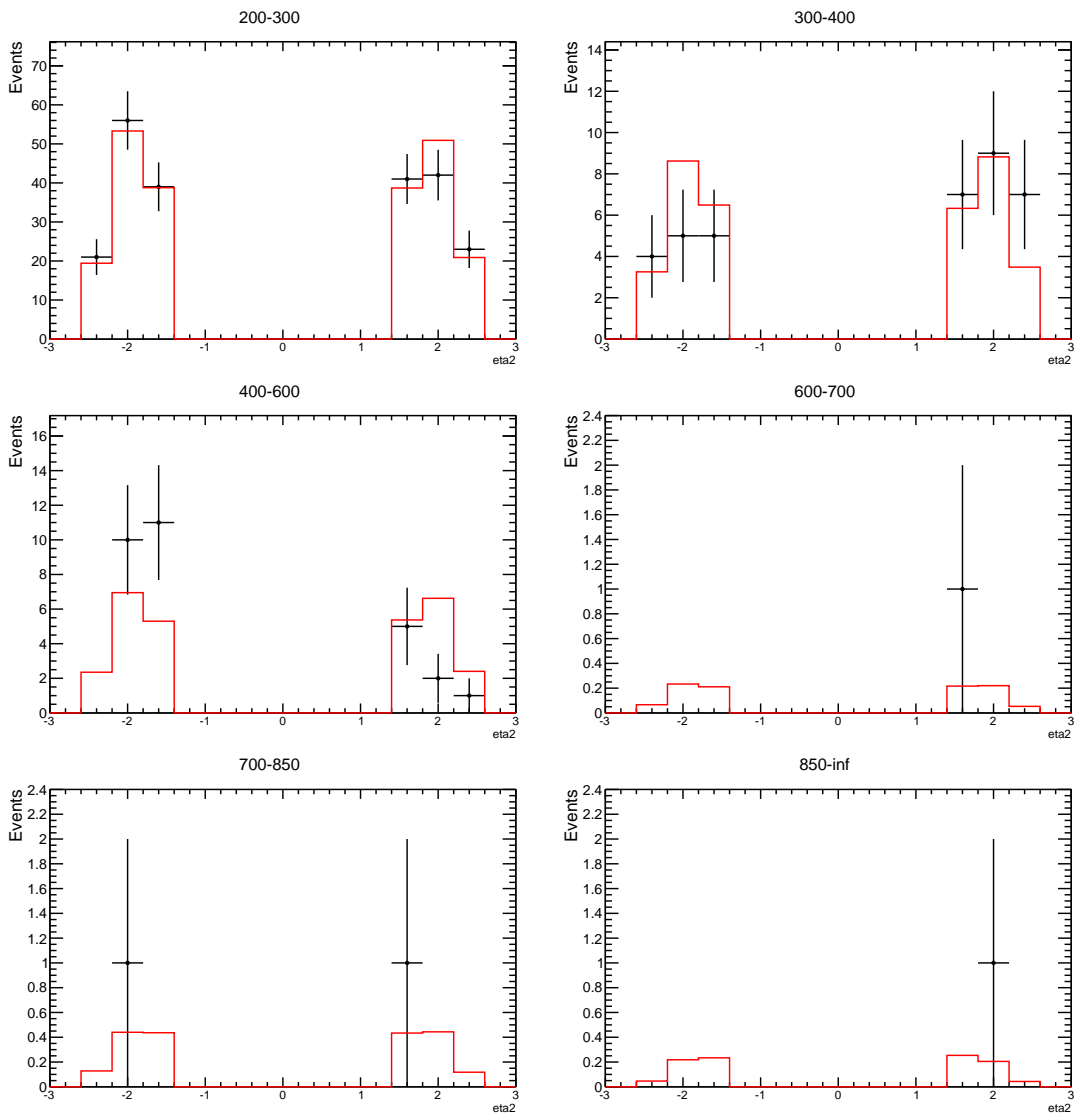
287 4.3.7 DR



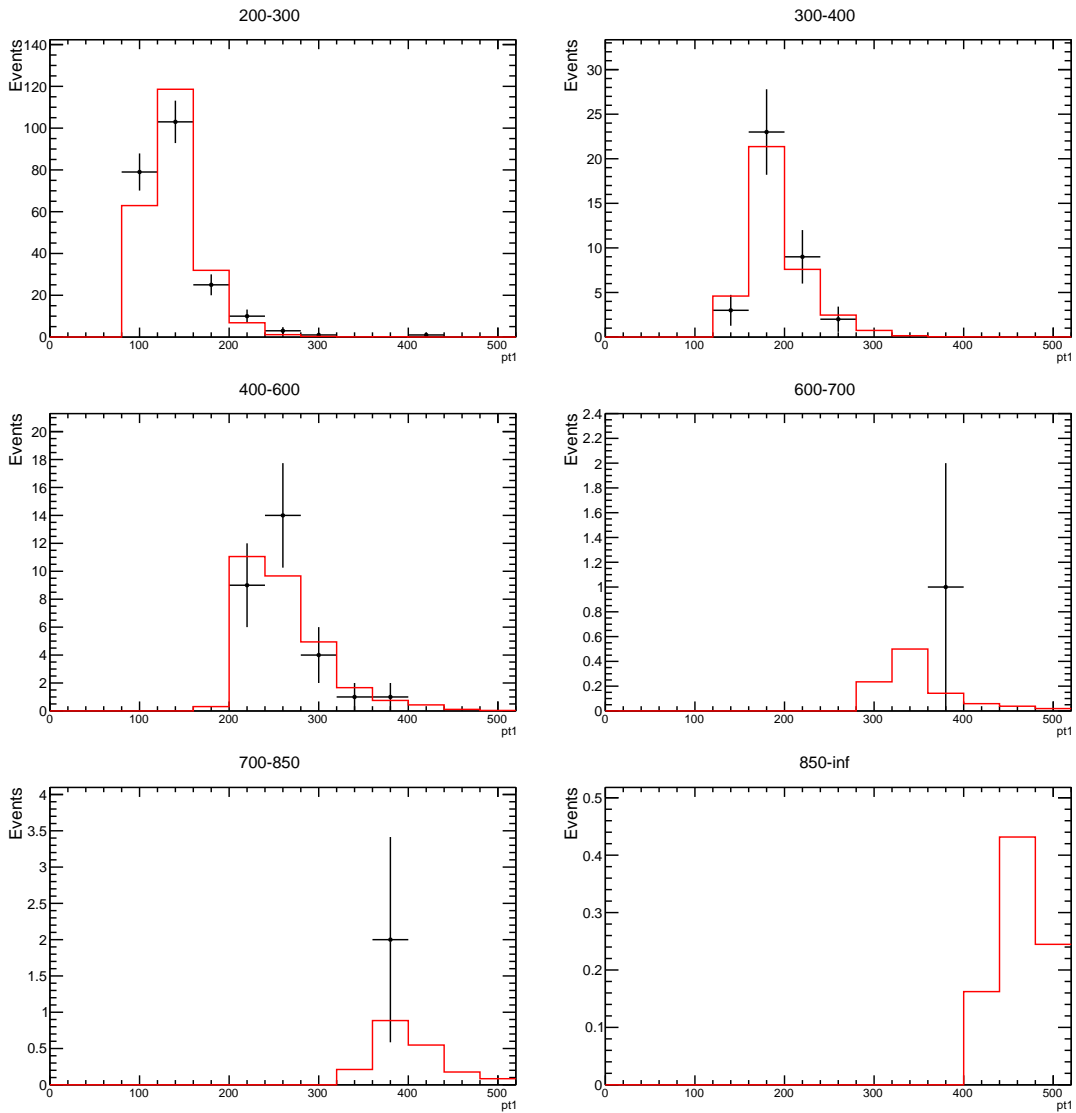
288 **4.4 EE**289 **4.4.1 Eta1**



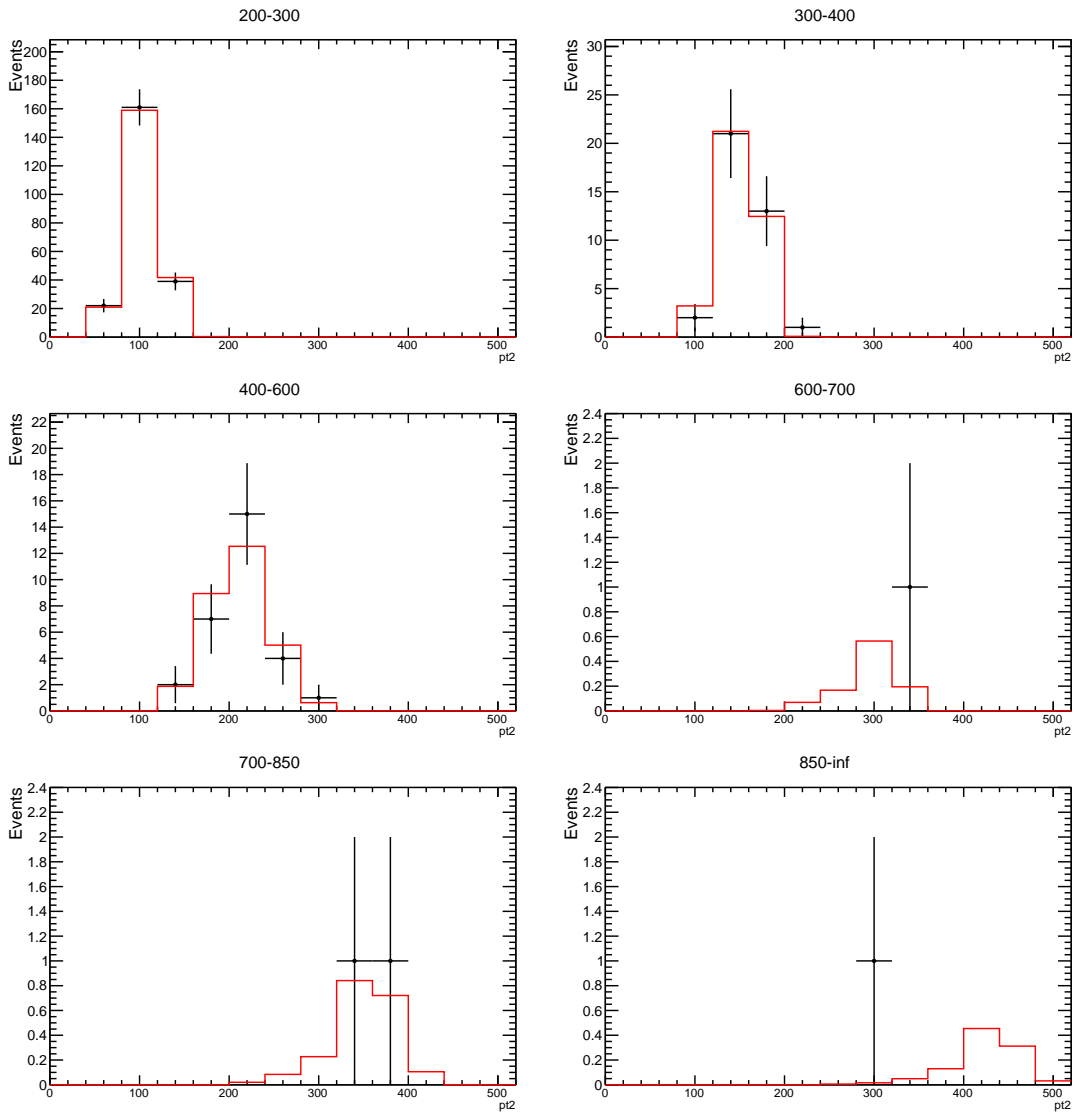
290 4.4.2 Eta2



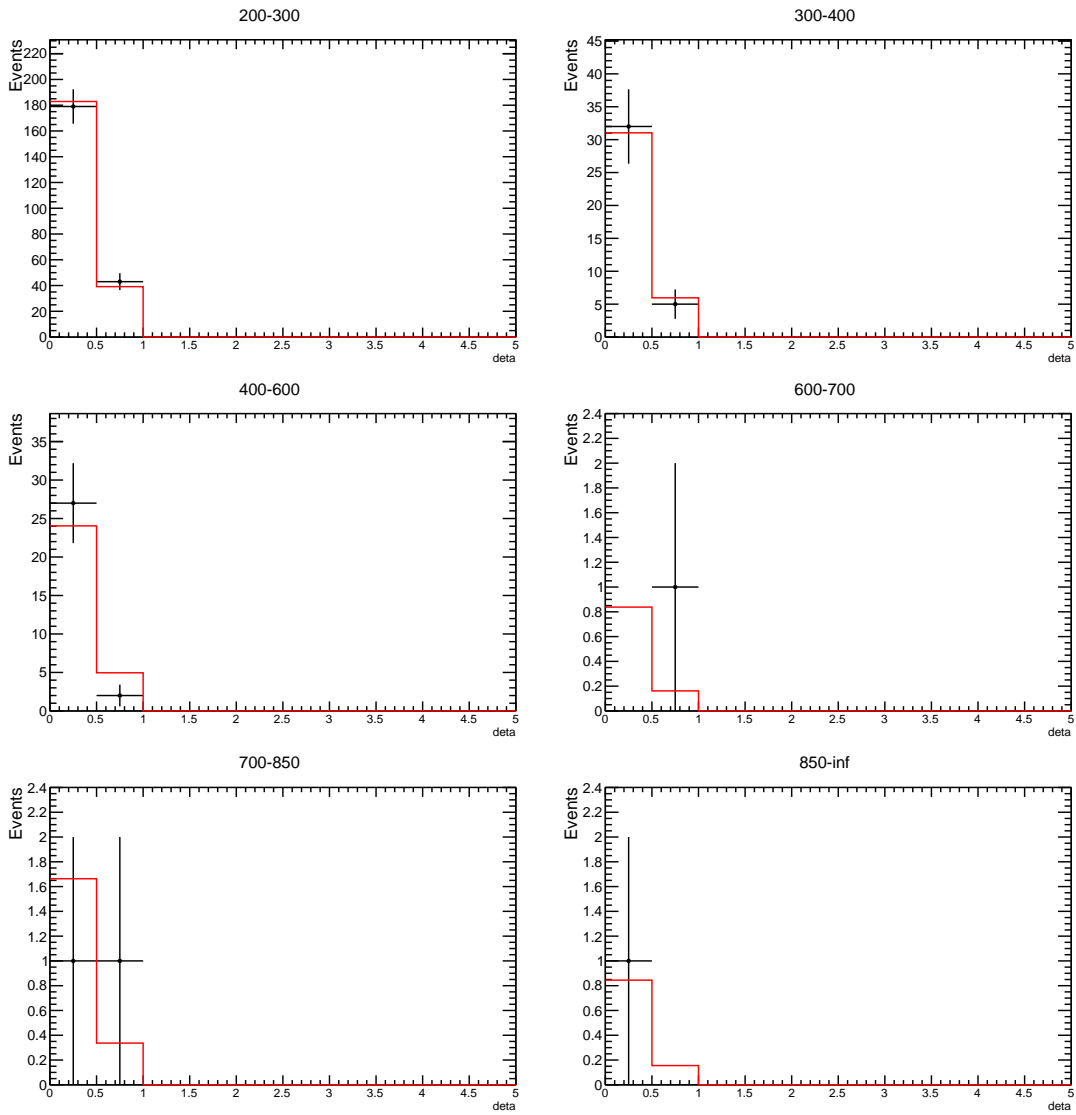
291 4.4.3 Pt1



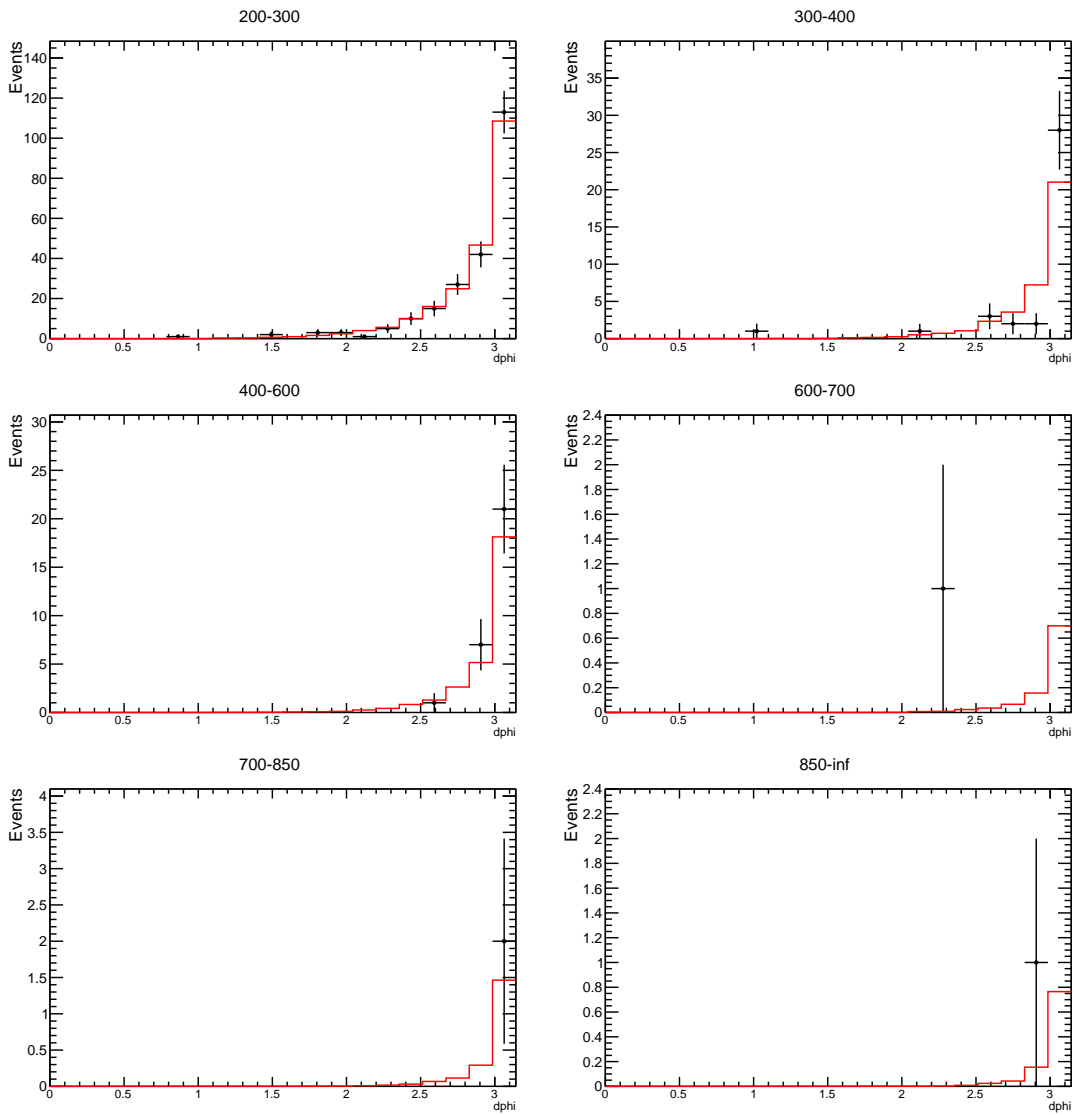
292 4.4.4 Pt2



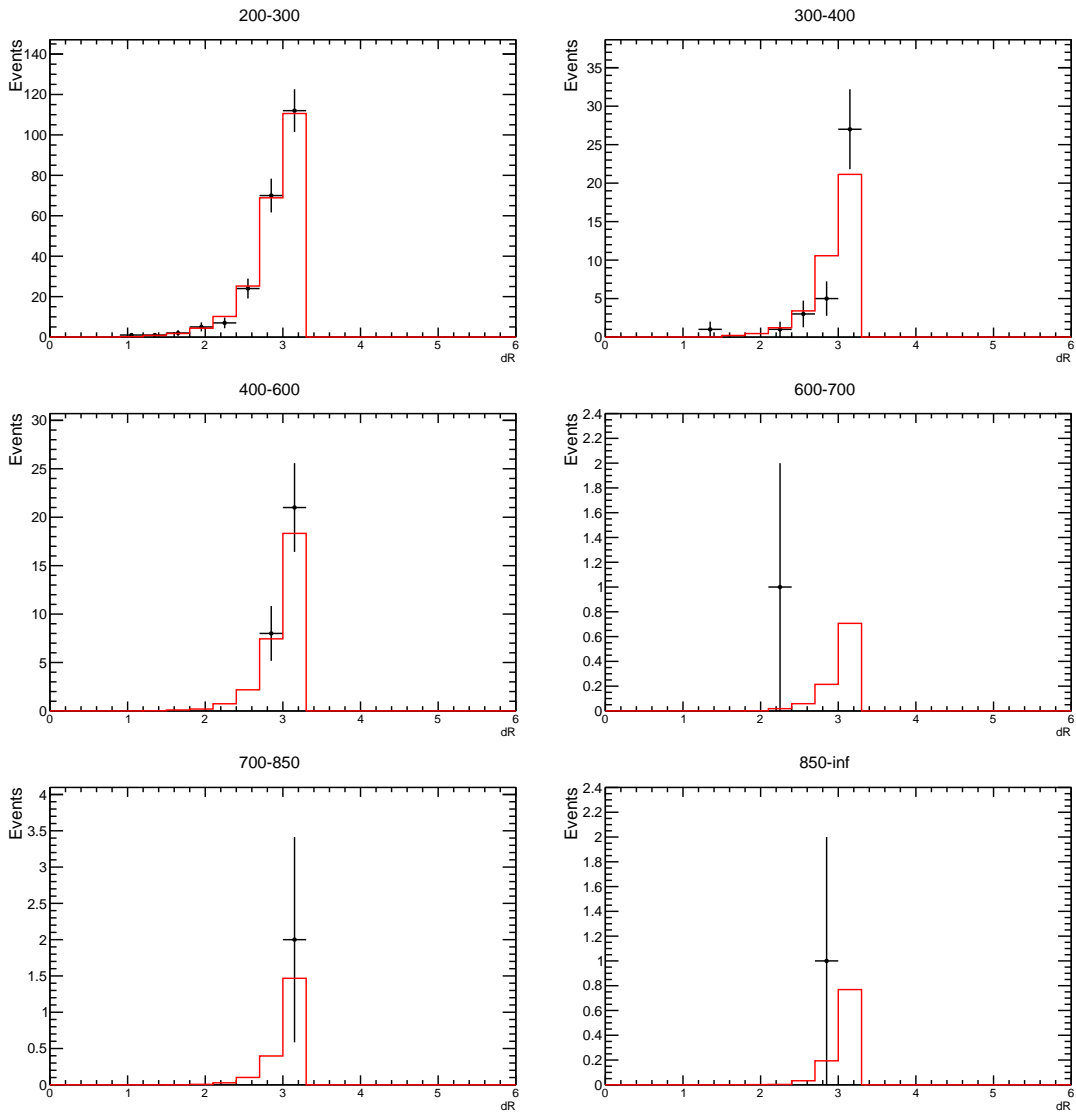
293 **4.4.5 Deta**

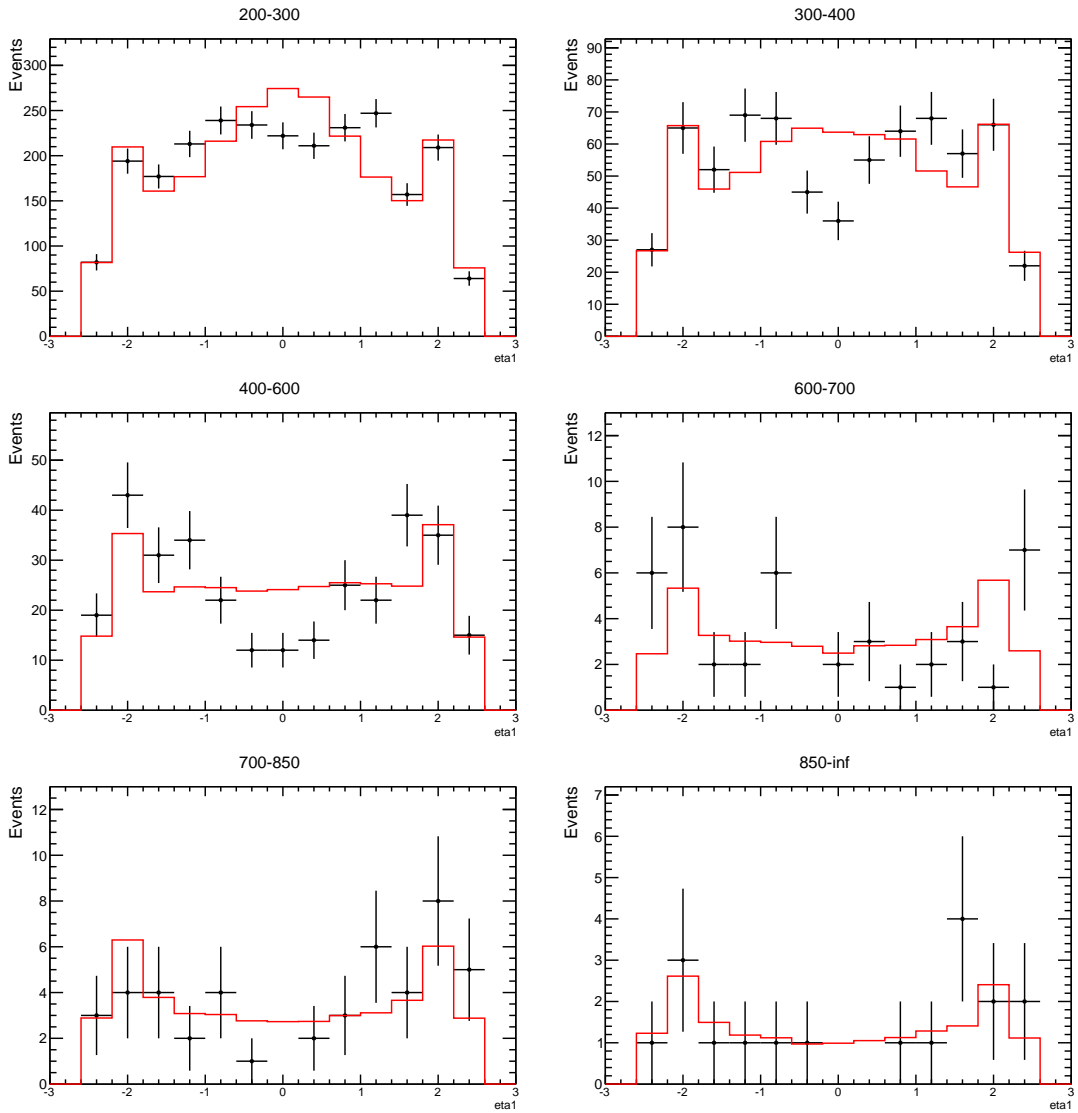


294 4.4.6 Dphi

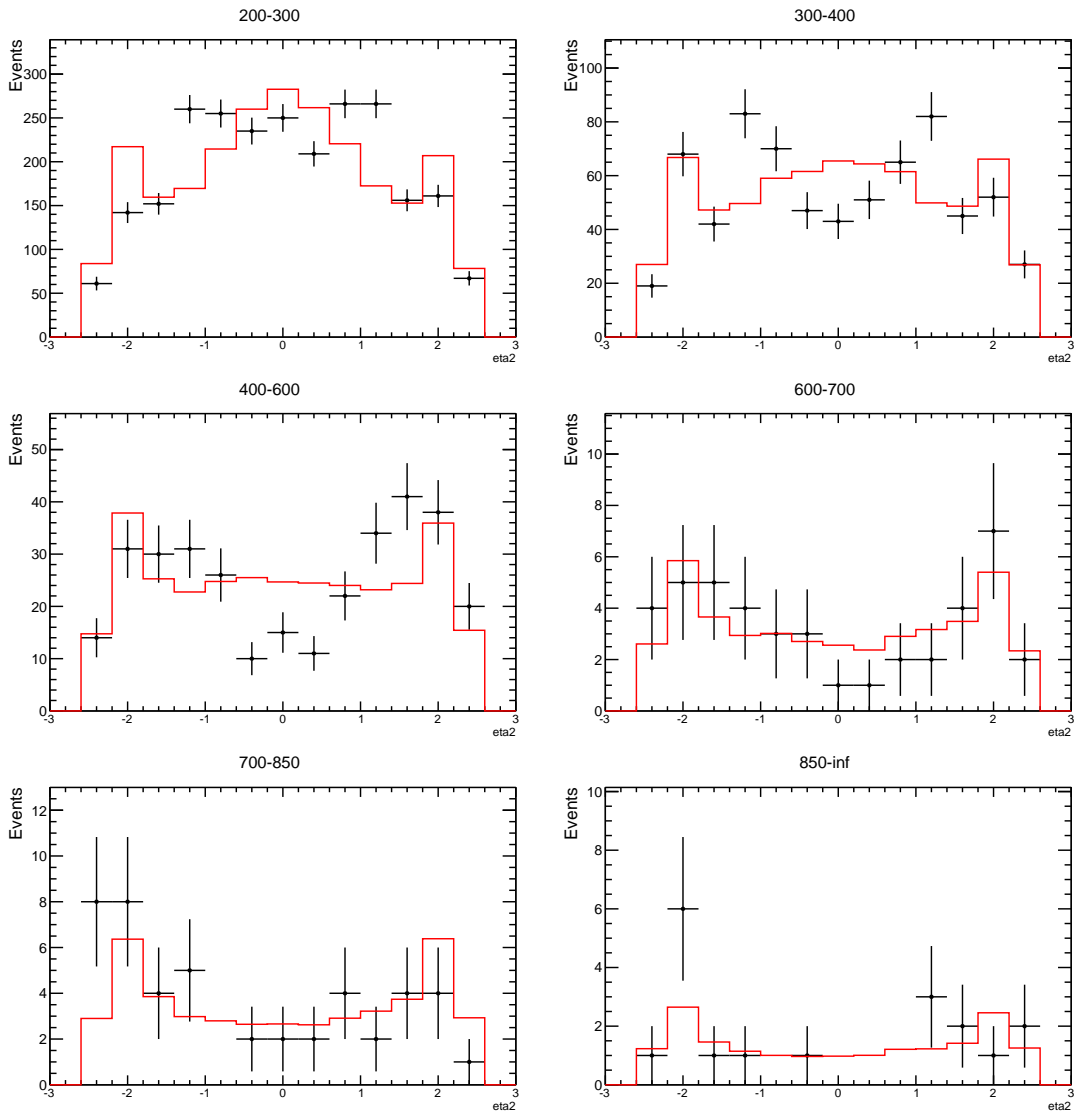


295 4.4.7 DR



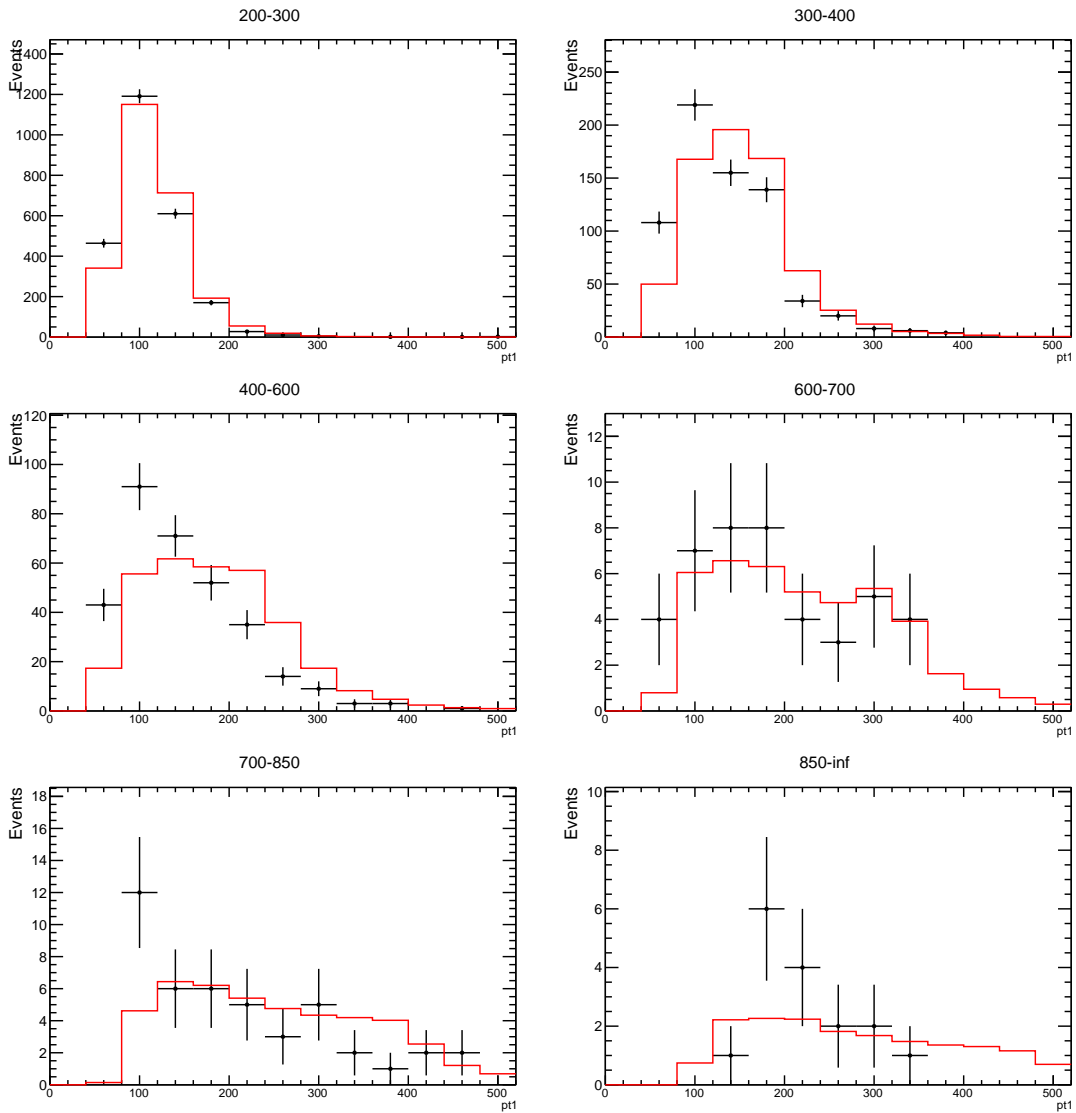
296 **5 Grey**297 **5.1 Inclusive**298 **5.1.1 Eta1**

299 5.1.2 Eta2

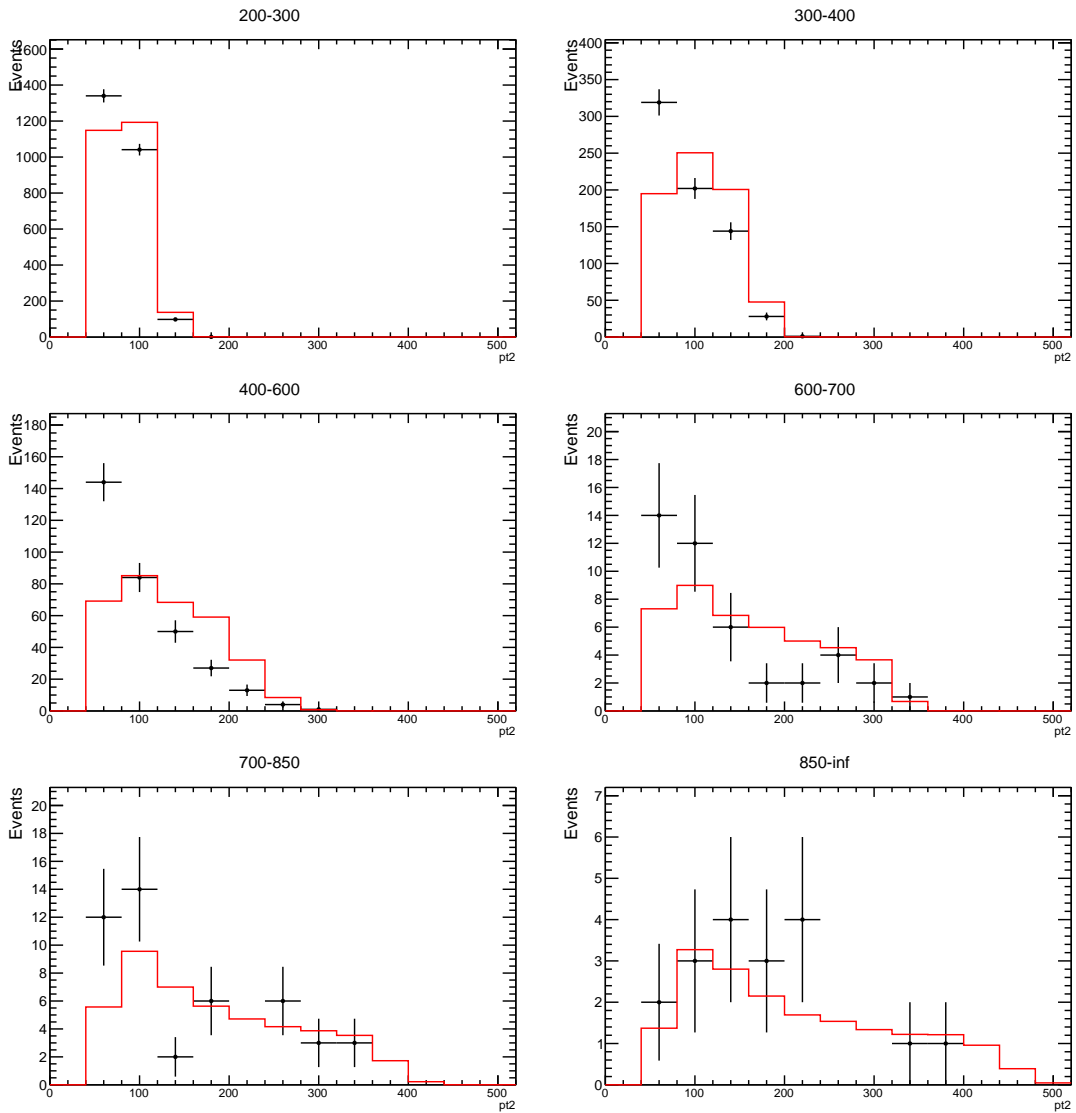




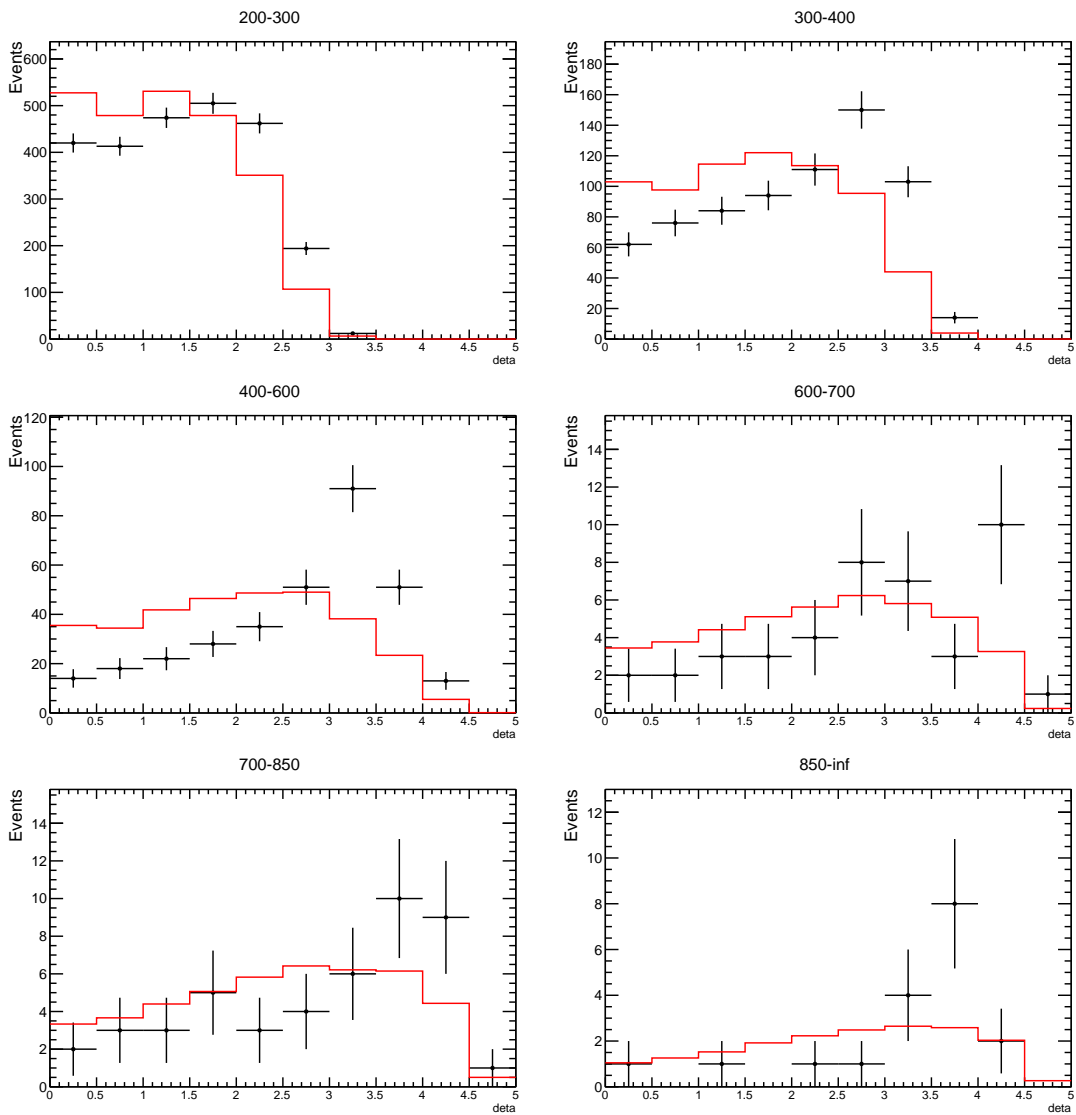
300 5.1.3 Pt1



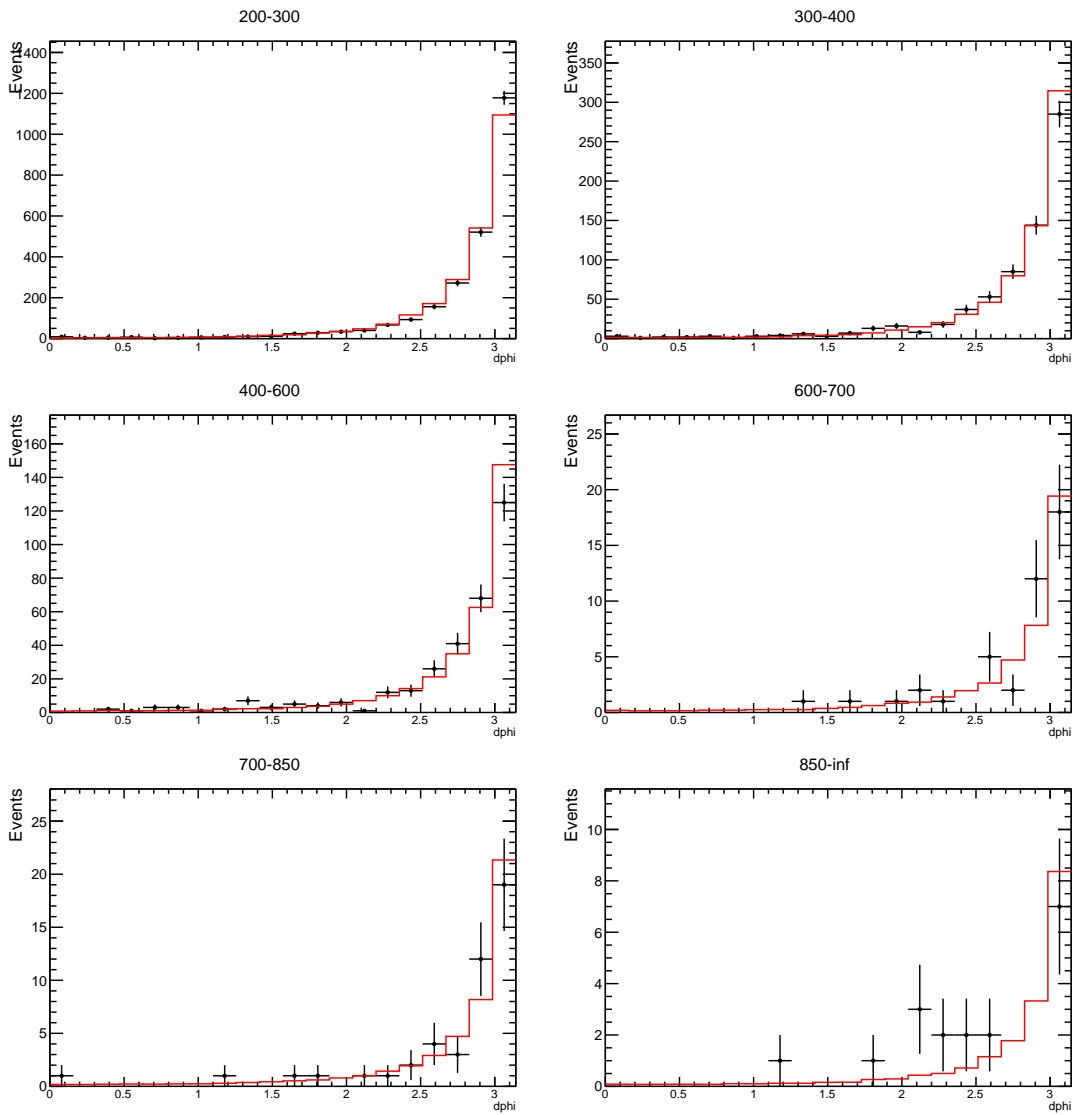
301 5.1.4 Pt2



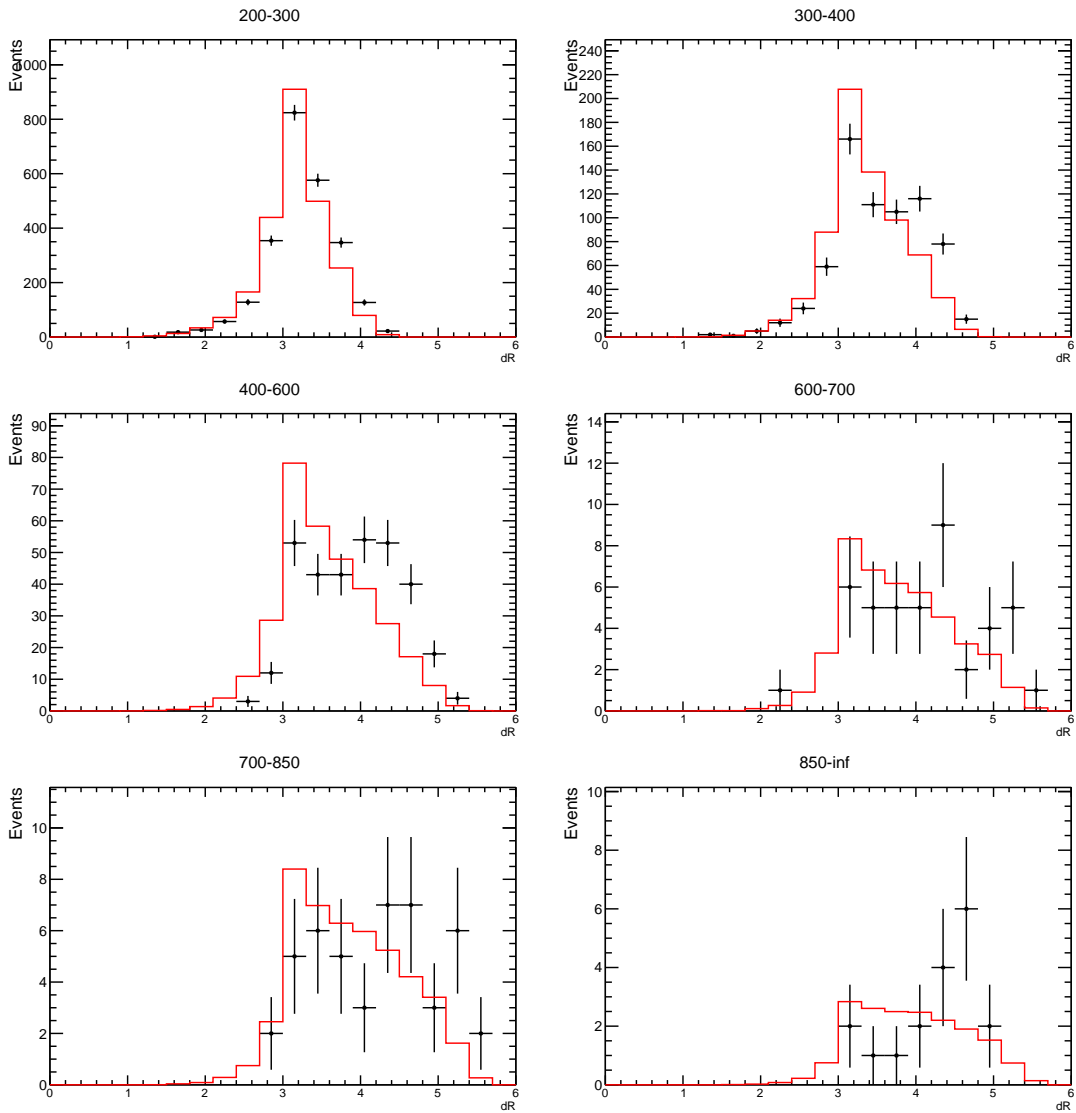
302 5.1.5 Deta



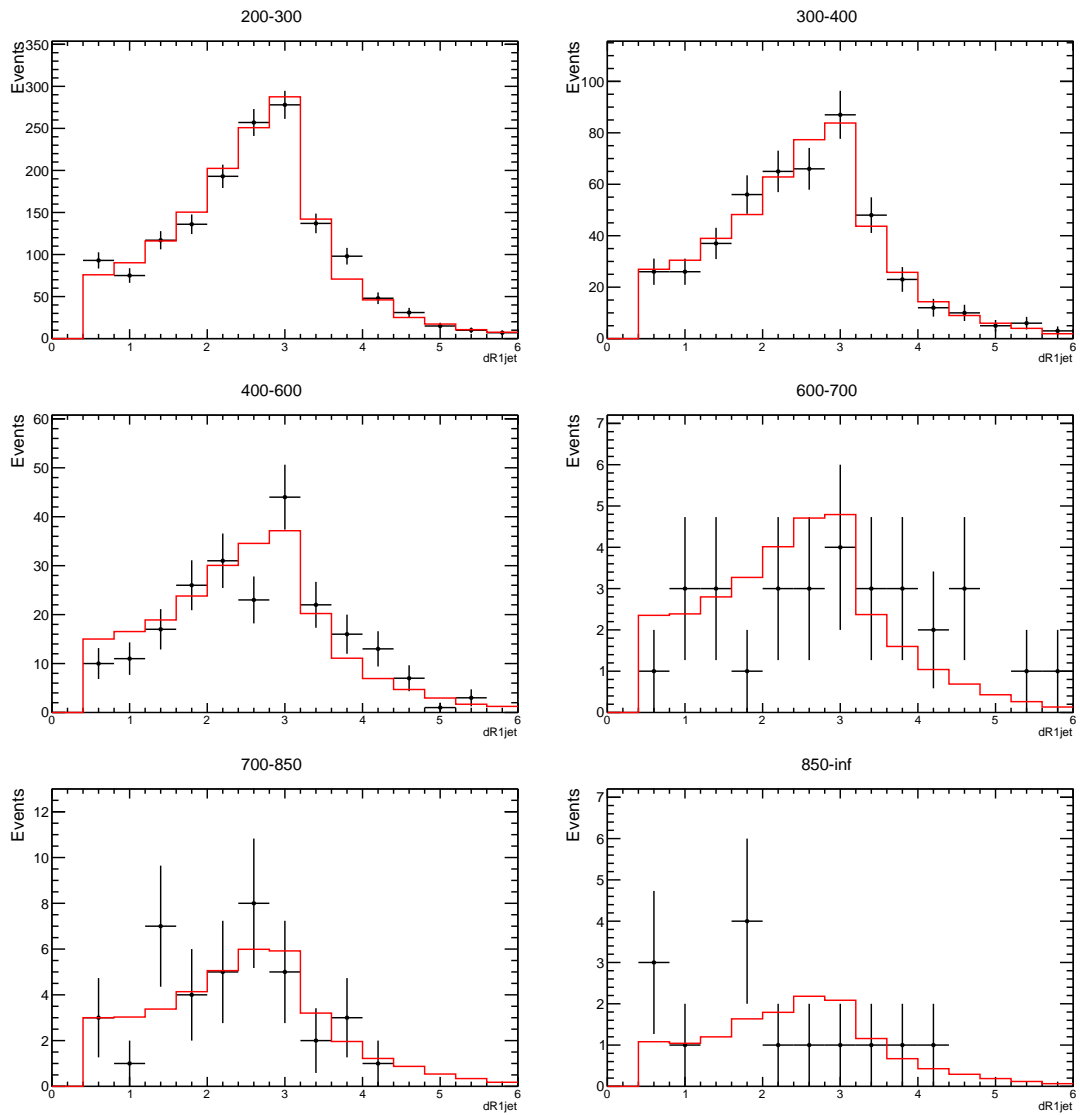
303 5.1.6 Dphi



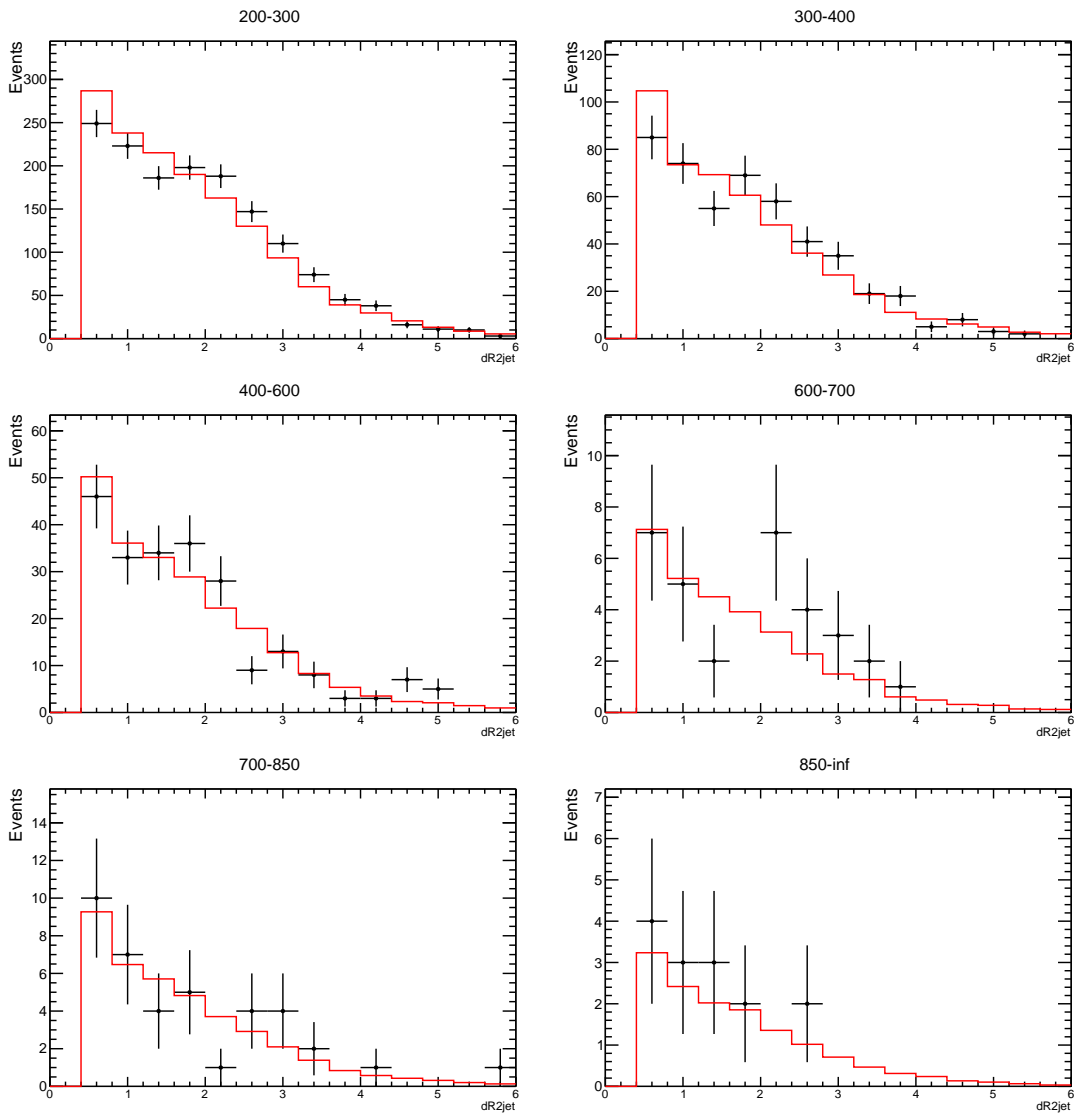
304 5.1.7 DR



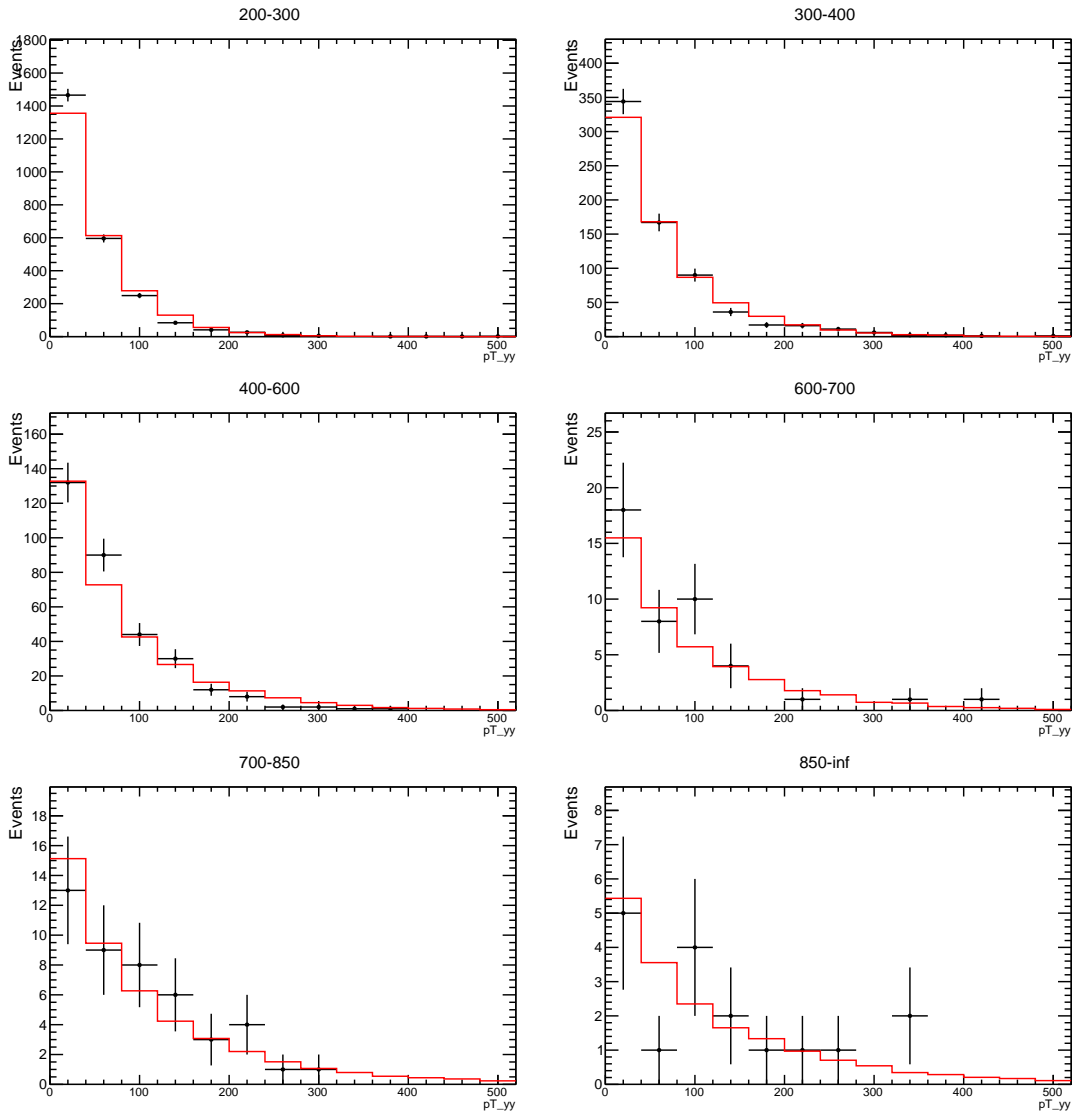
## 305 5.1.8 DR1jet



306 5.1.9 DR2jet

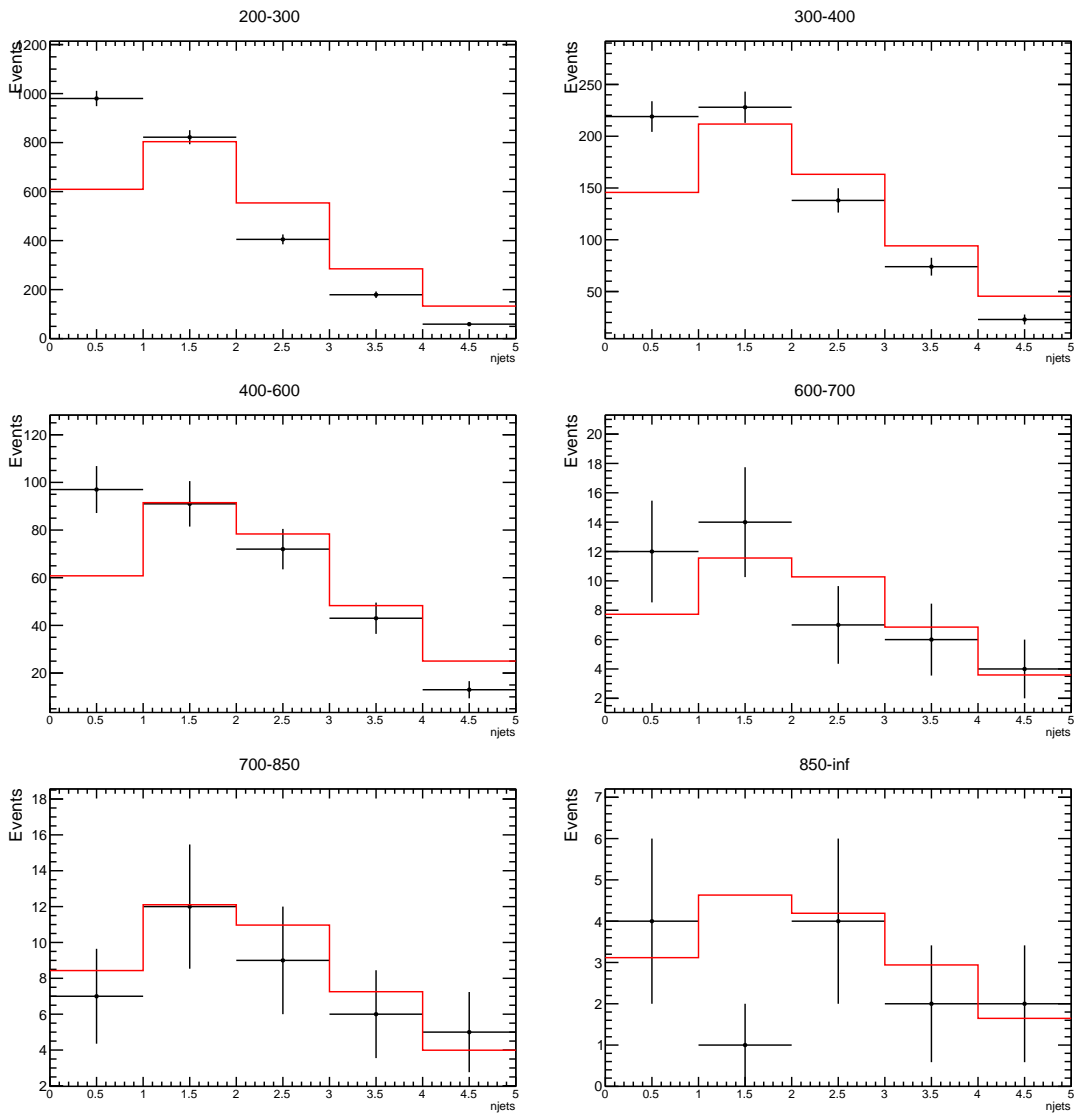


307 5.1.10 ptyy



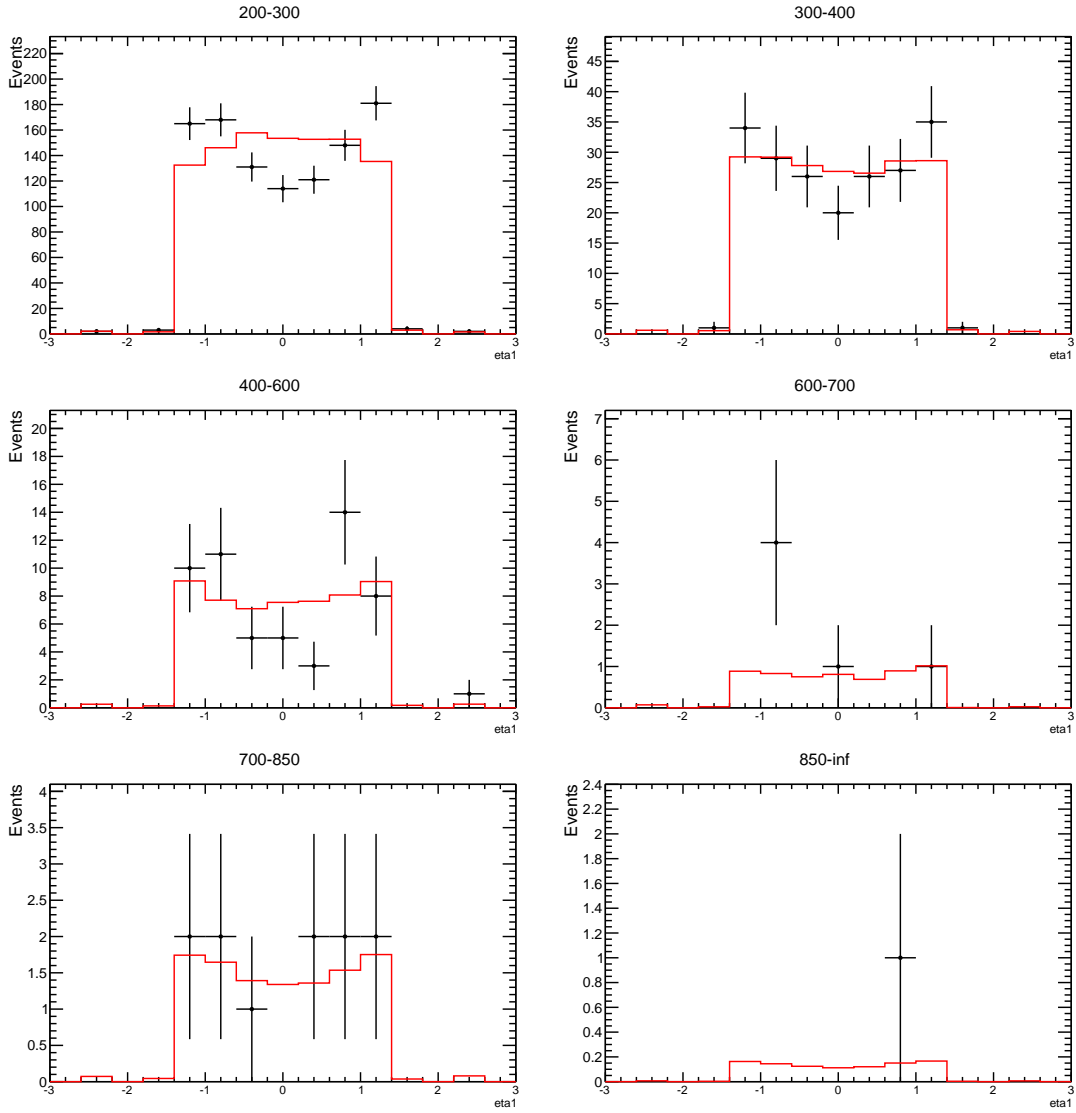


308 5.1.11 Njets

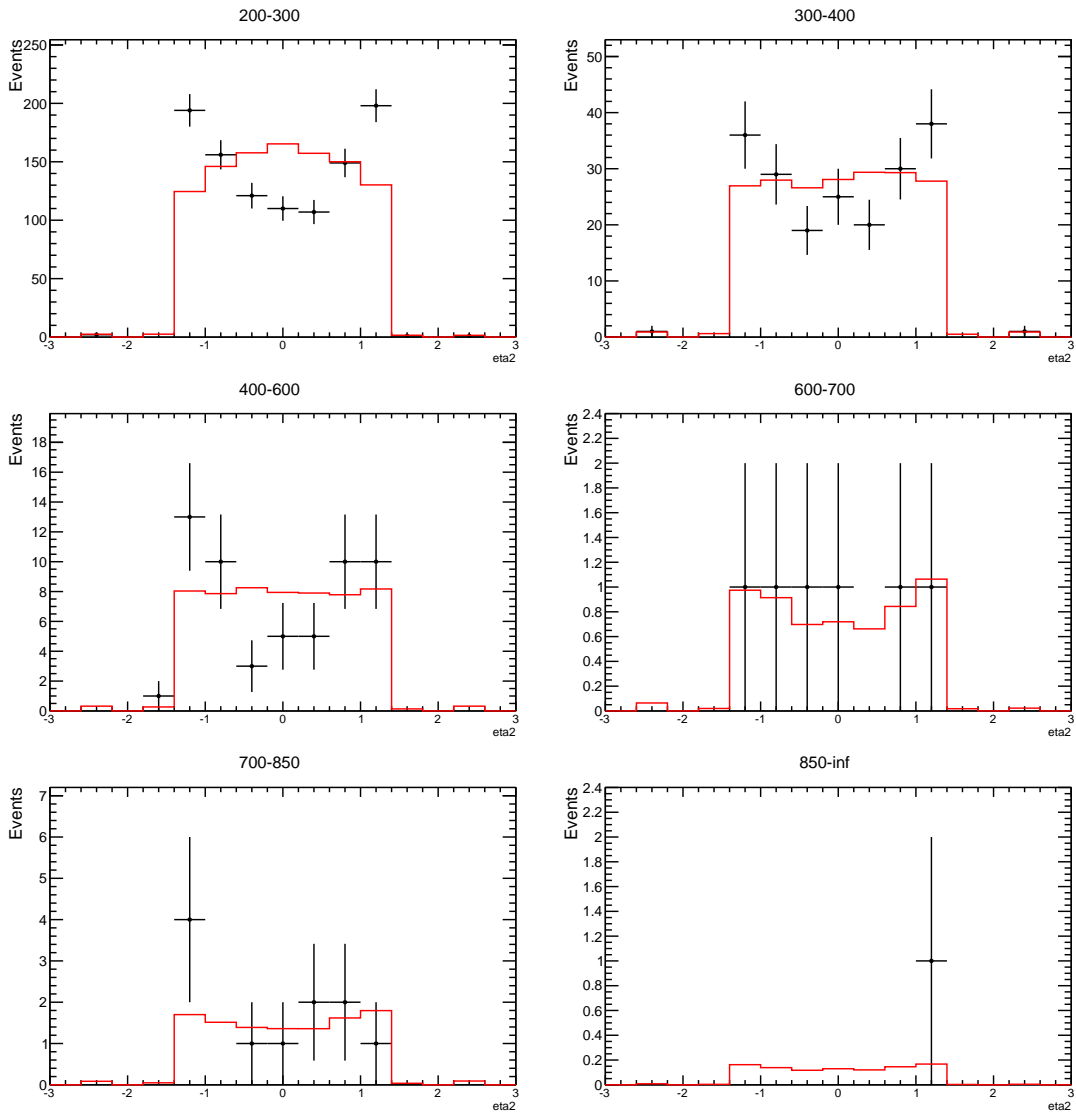


309 5.2 BB

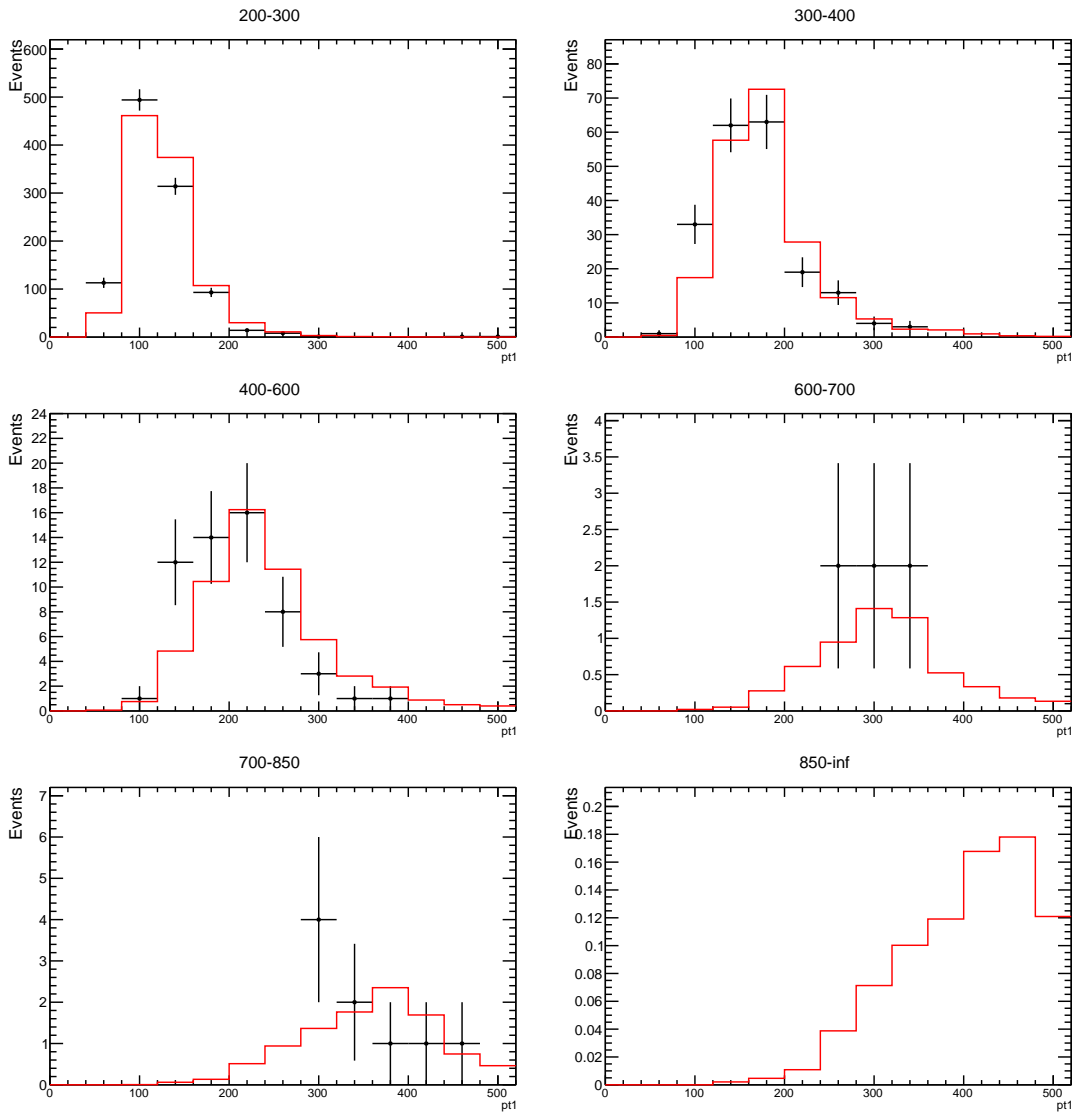
310 5.2.1 Eta1



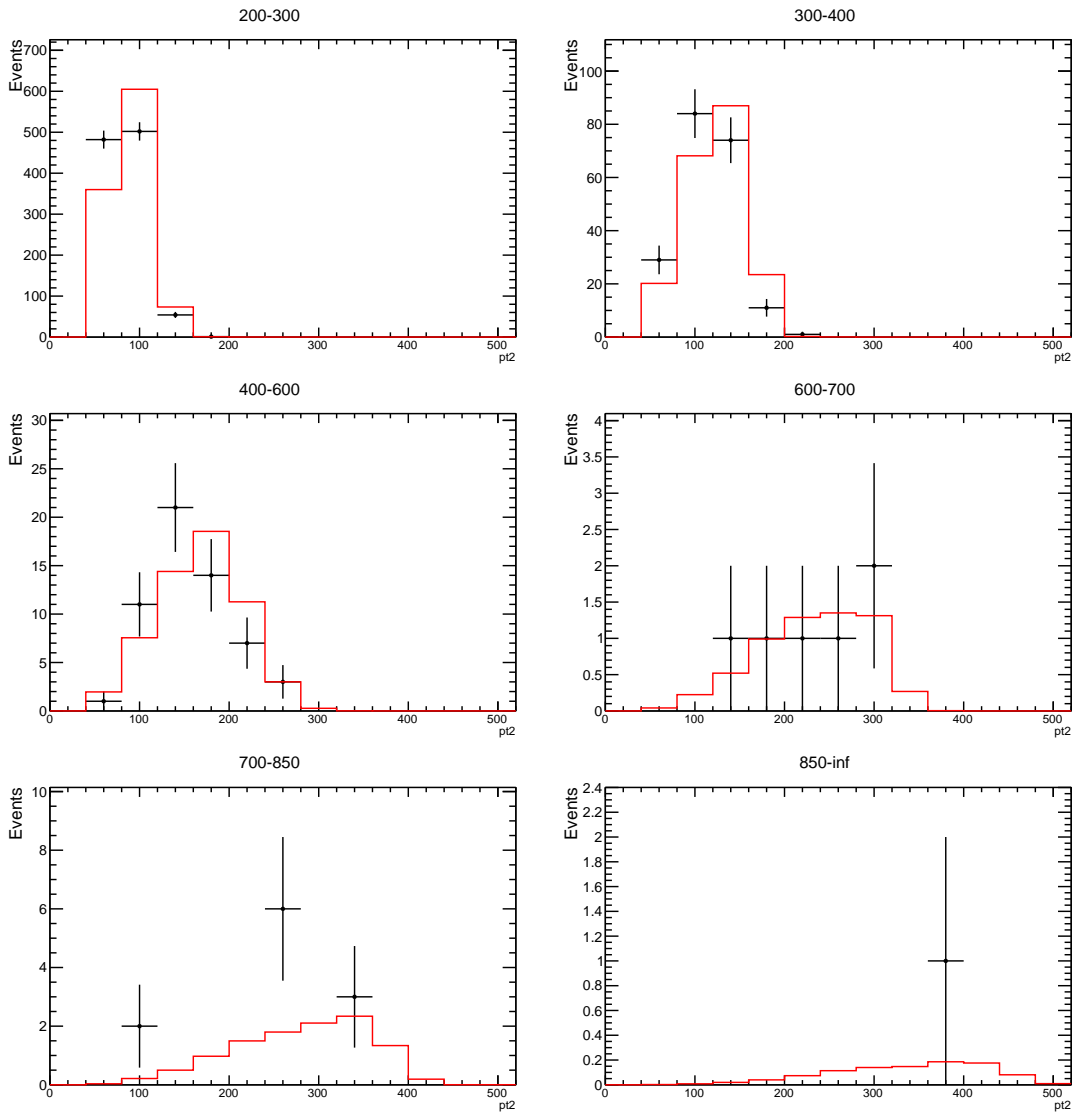
311 5.2.2 Eta2



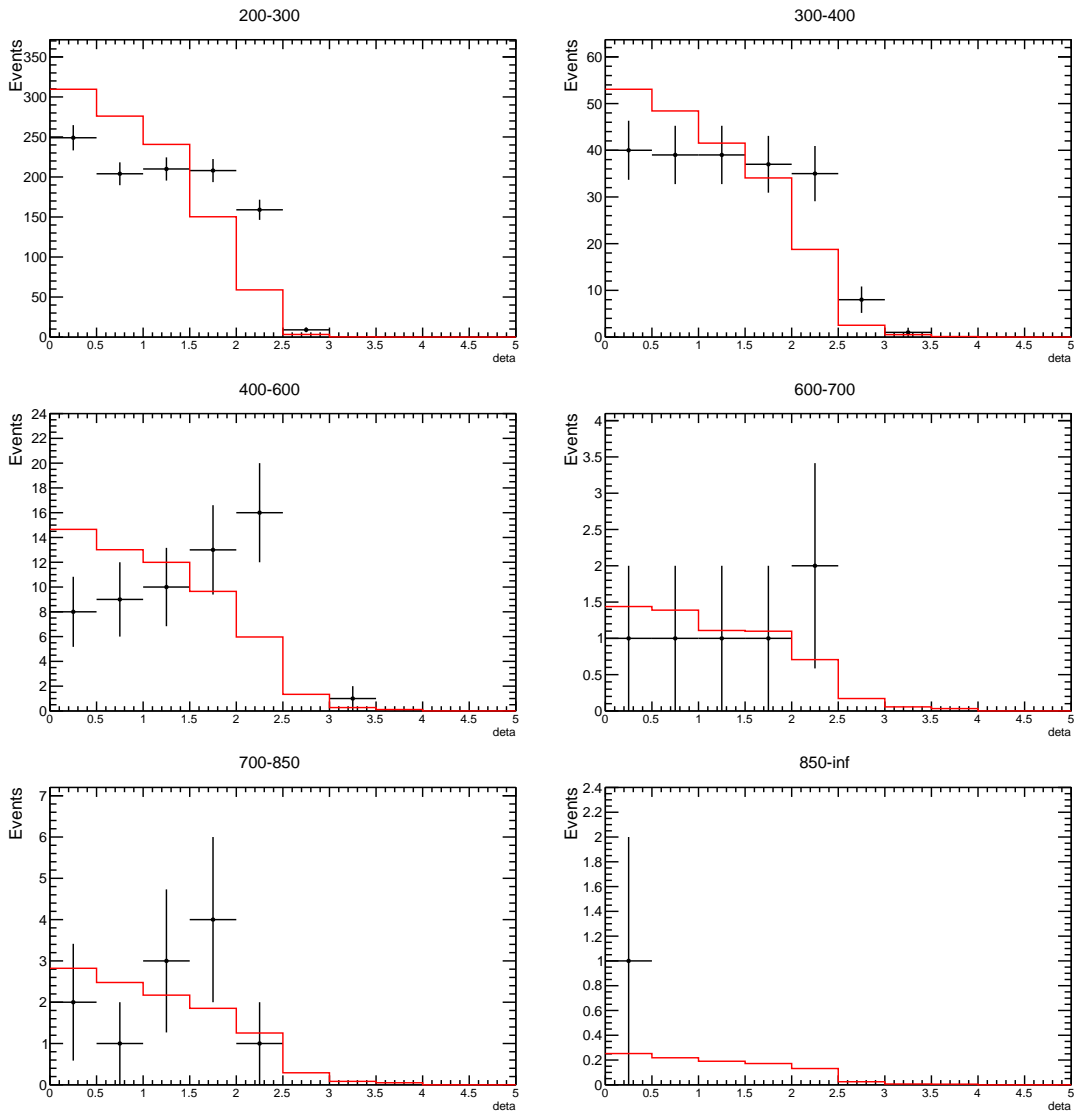
312 5.2.3 Pt1



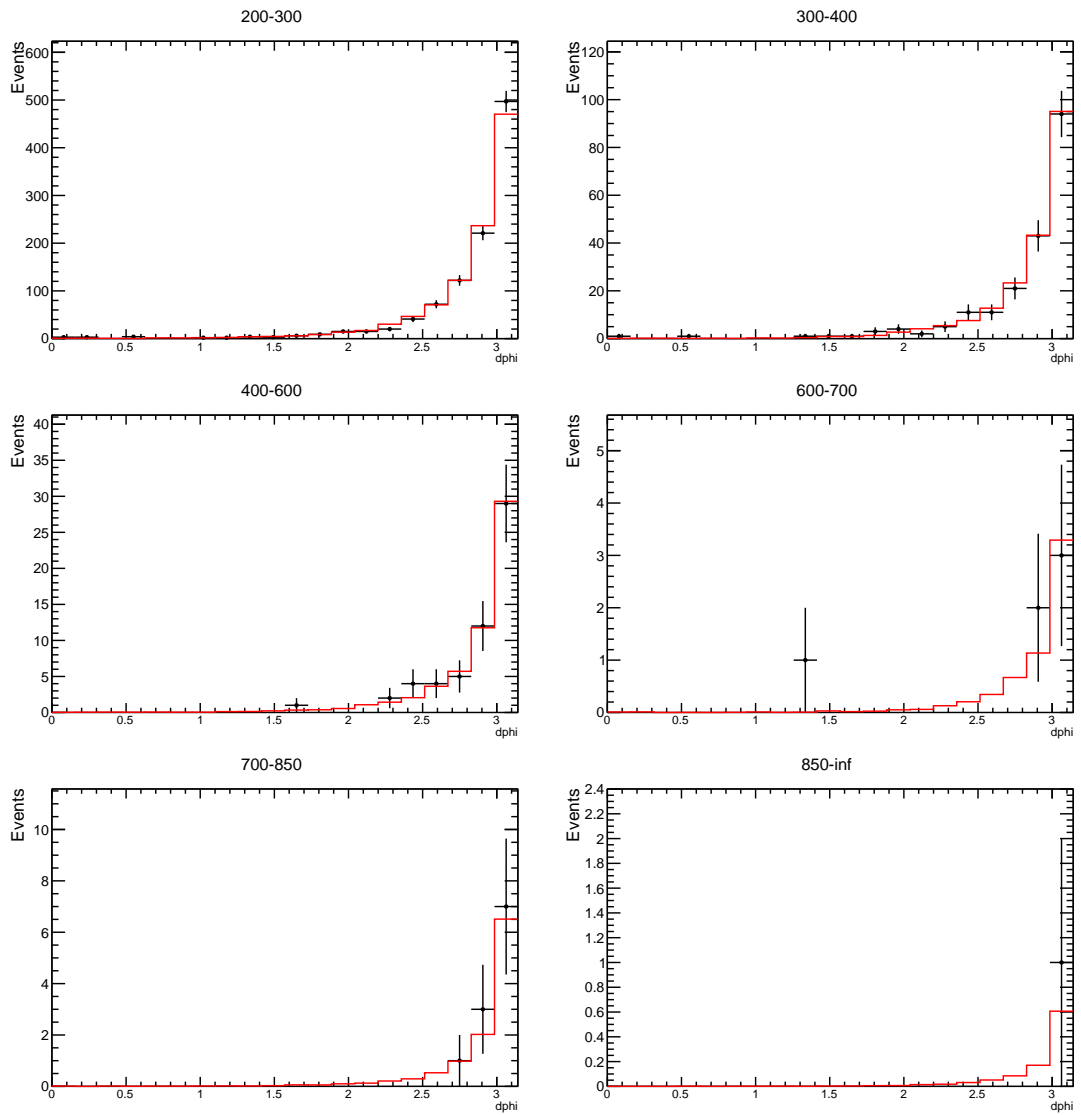
313 5.2.4 Pt2



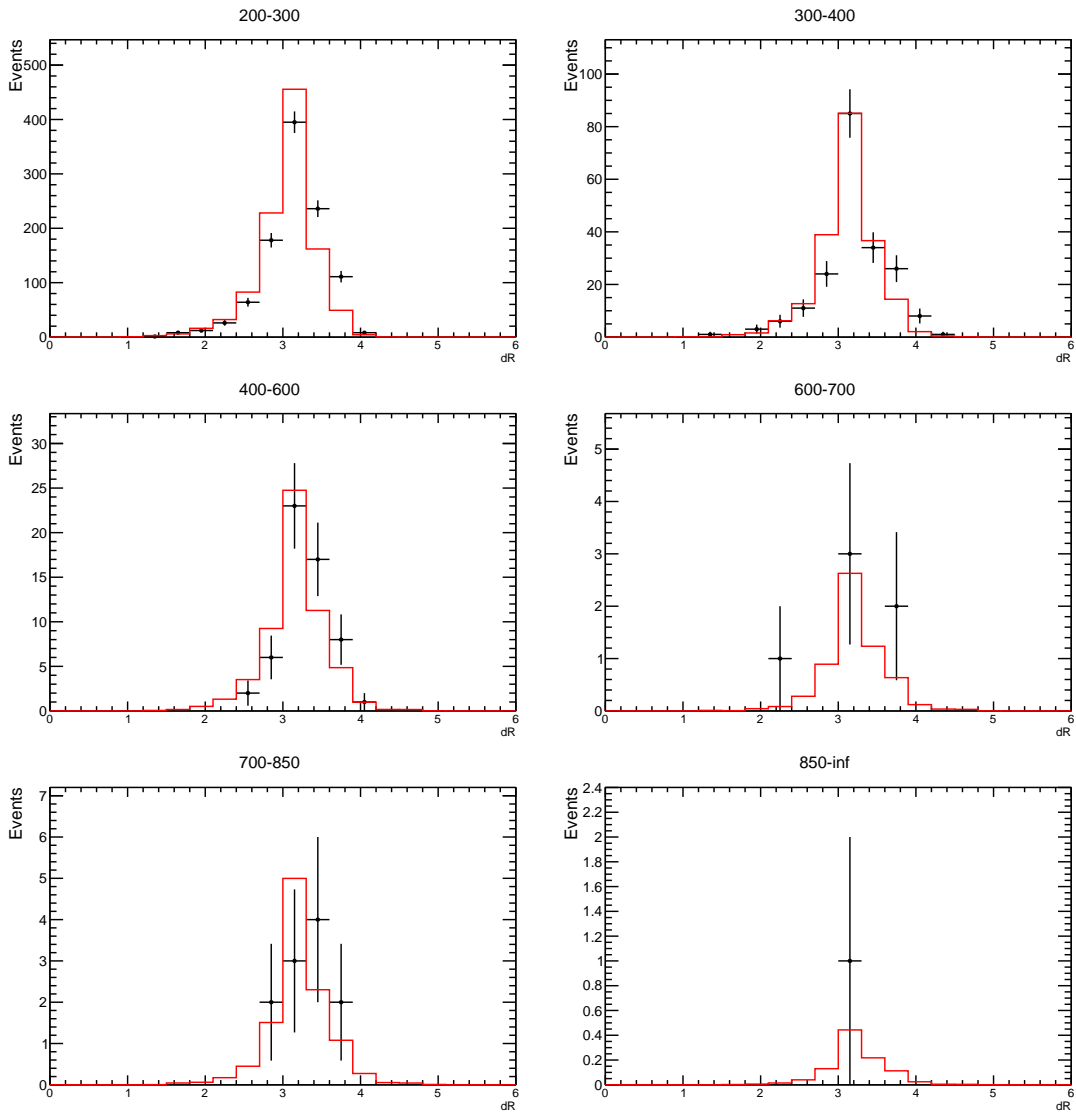
314 5.2.5 Deta



315 5.2.6 Dphi

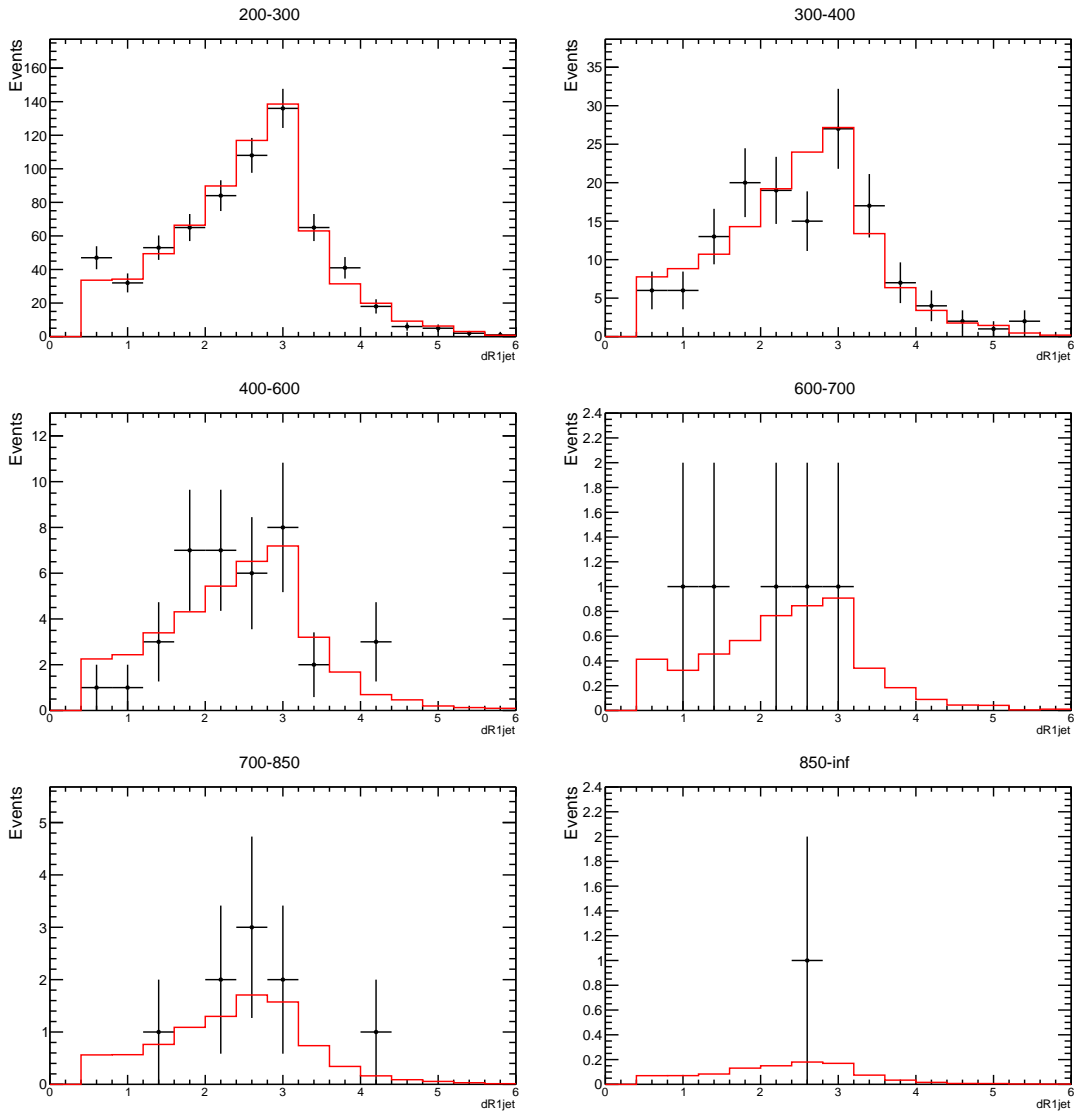


316 5.2.7 DR

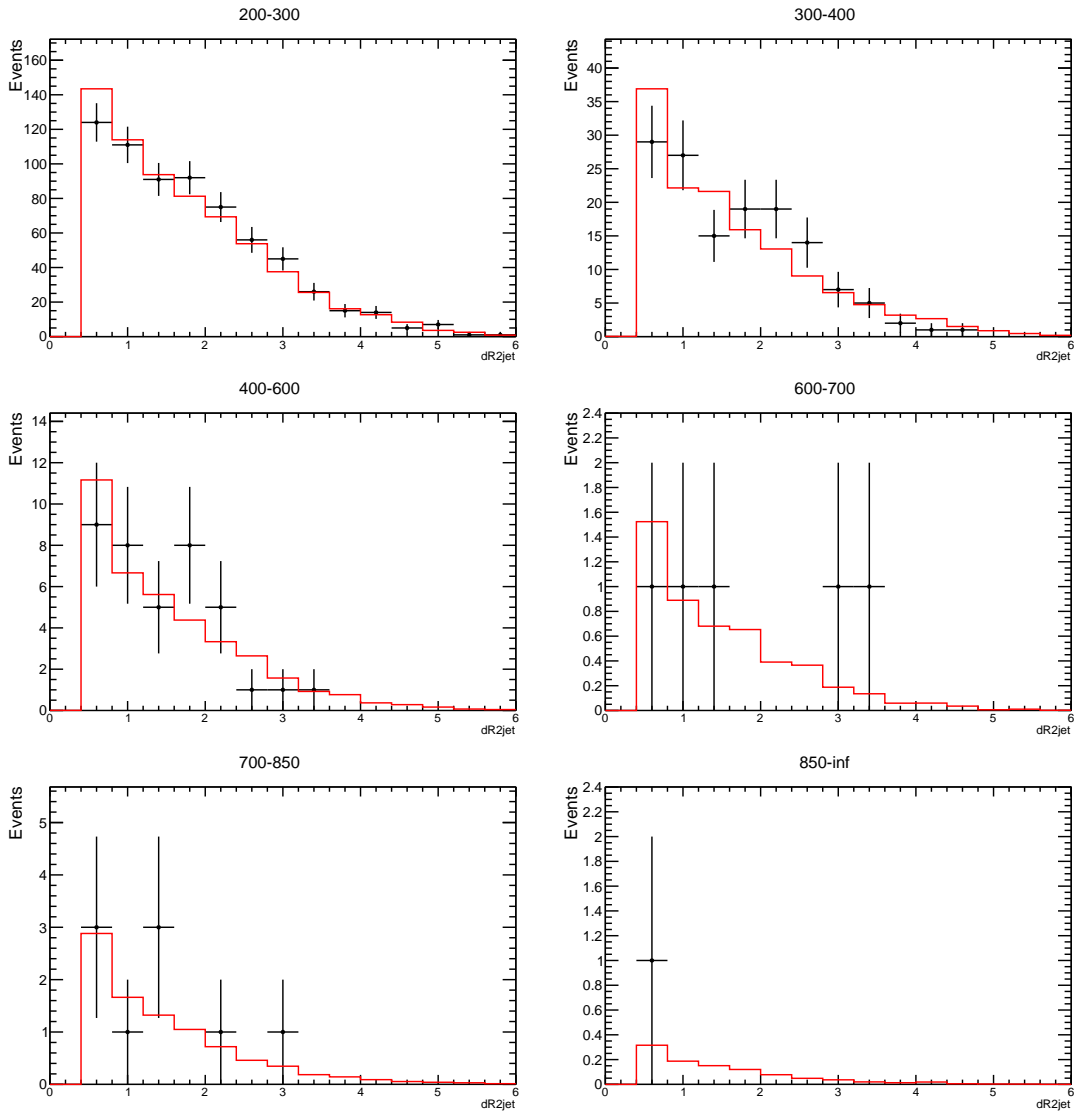




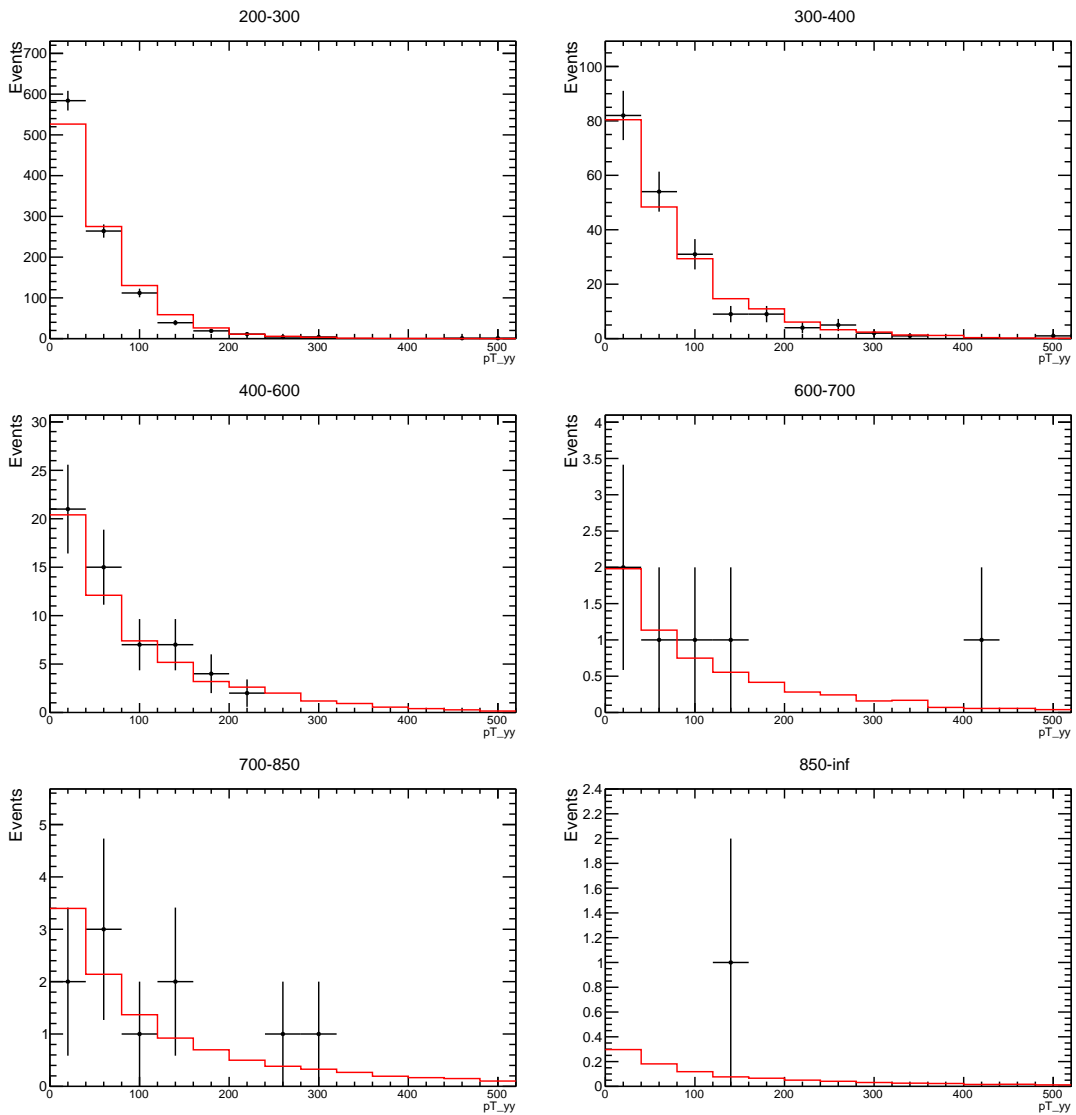
317 5.2.8 DR1jet



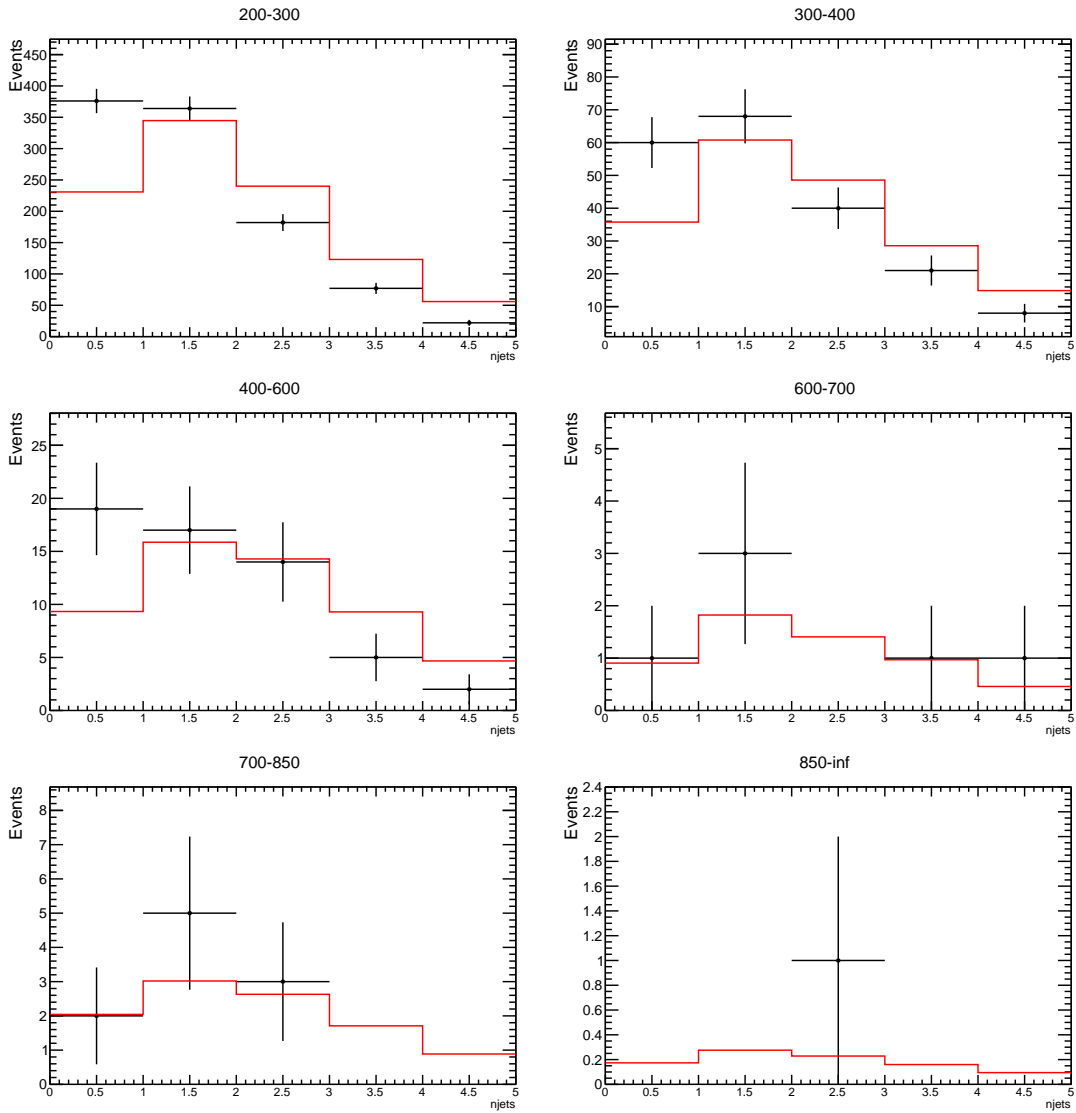
318 5.2.9 DR2jet



319 5.2.10 ptyy

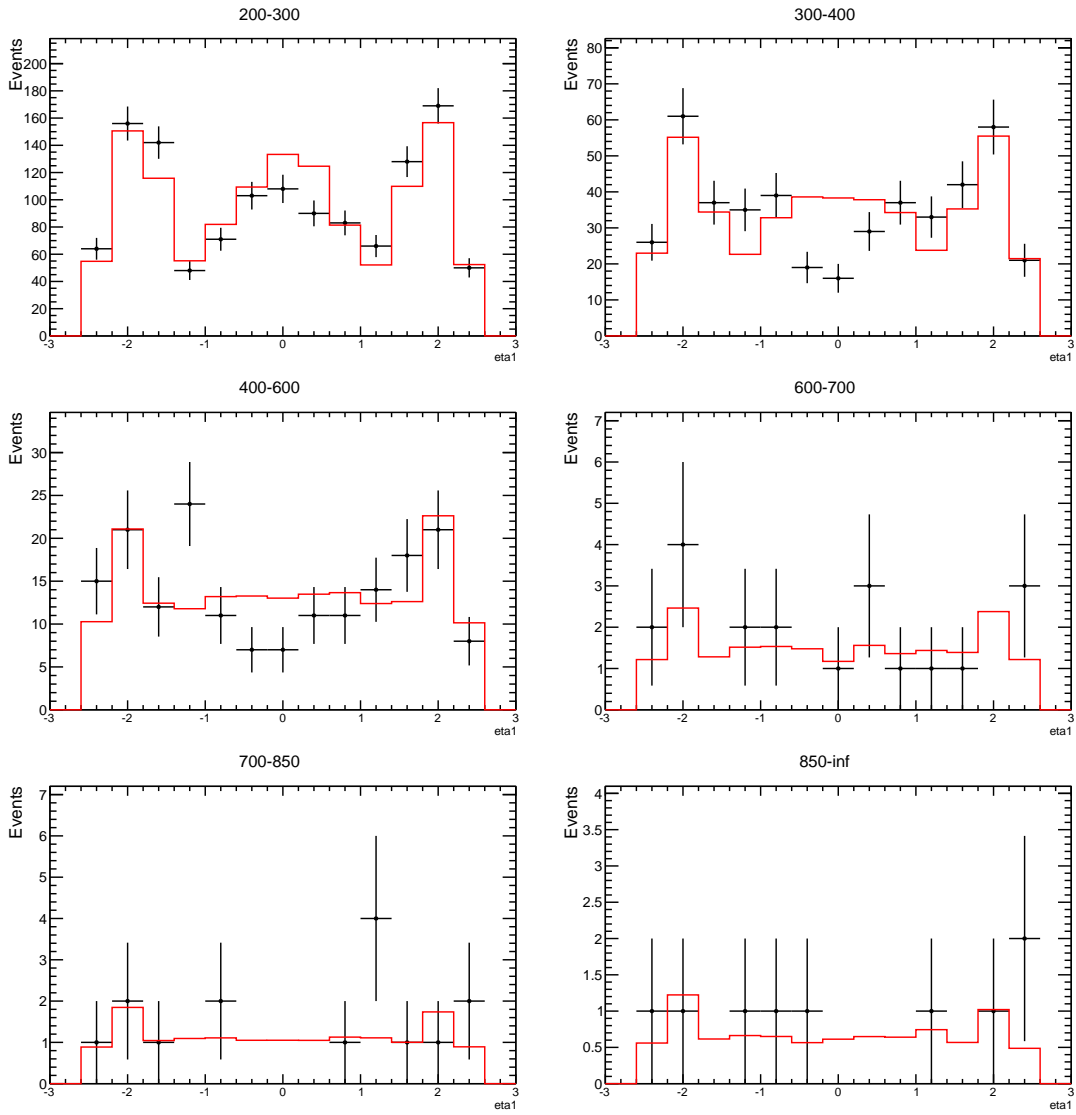


320 5.2.11 Njets

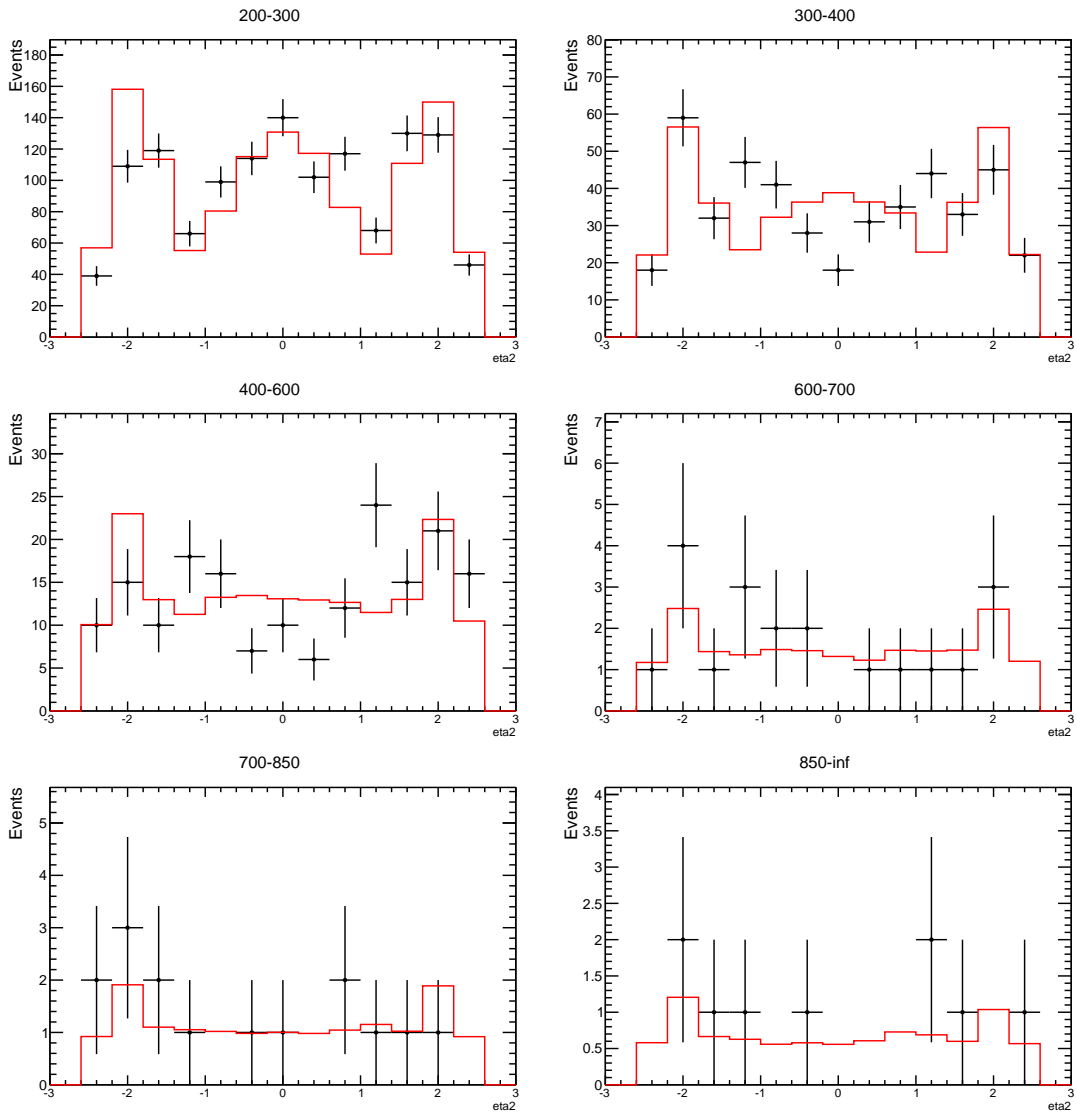


321 **5.3 BEEB**

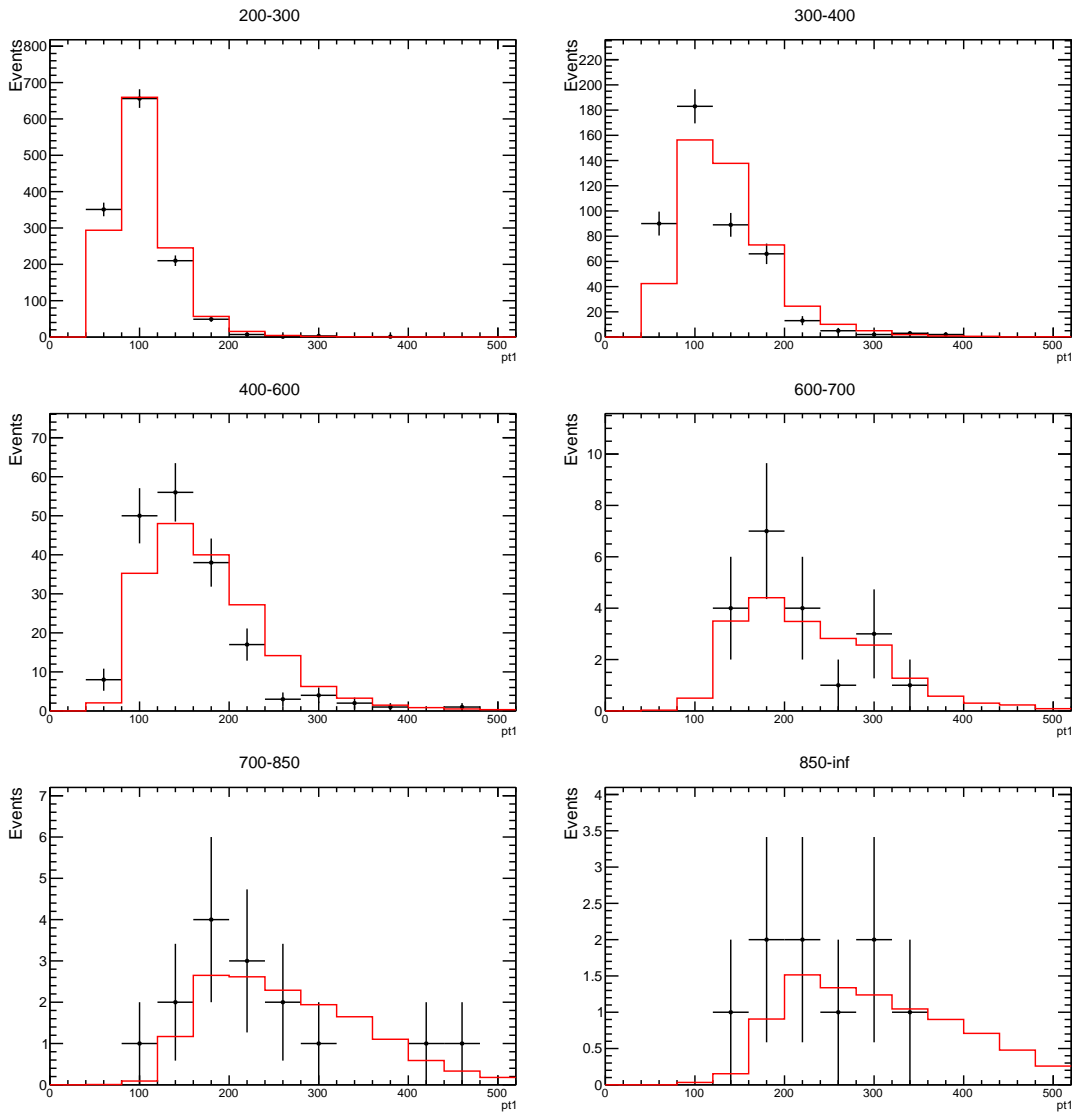
322 **5.3.1 Eta1**



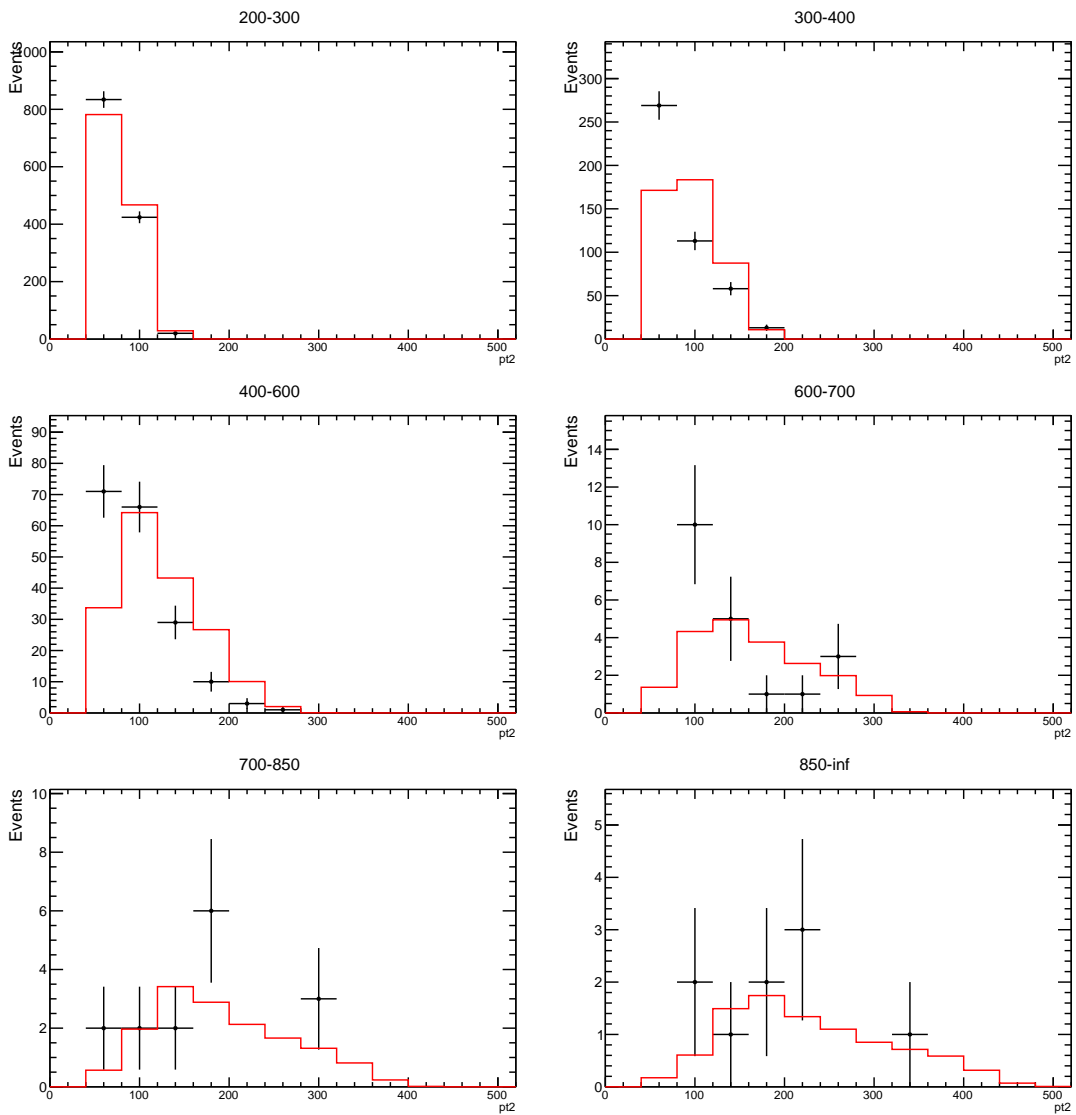
323 5.3.2 Eta2



324 5.3.3 Pt1

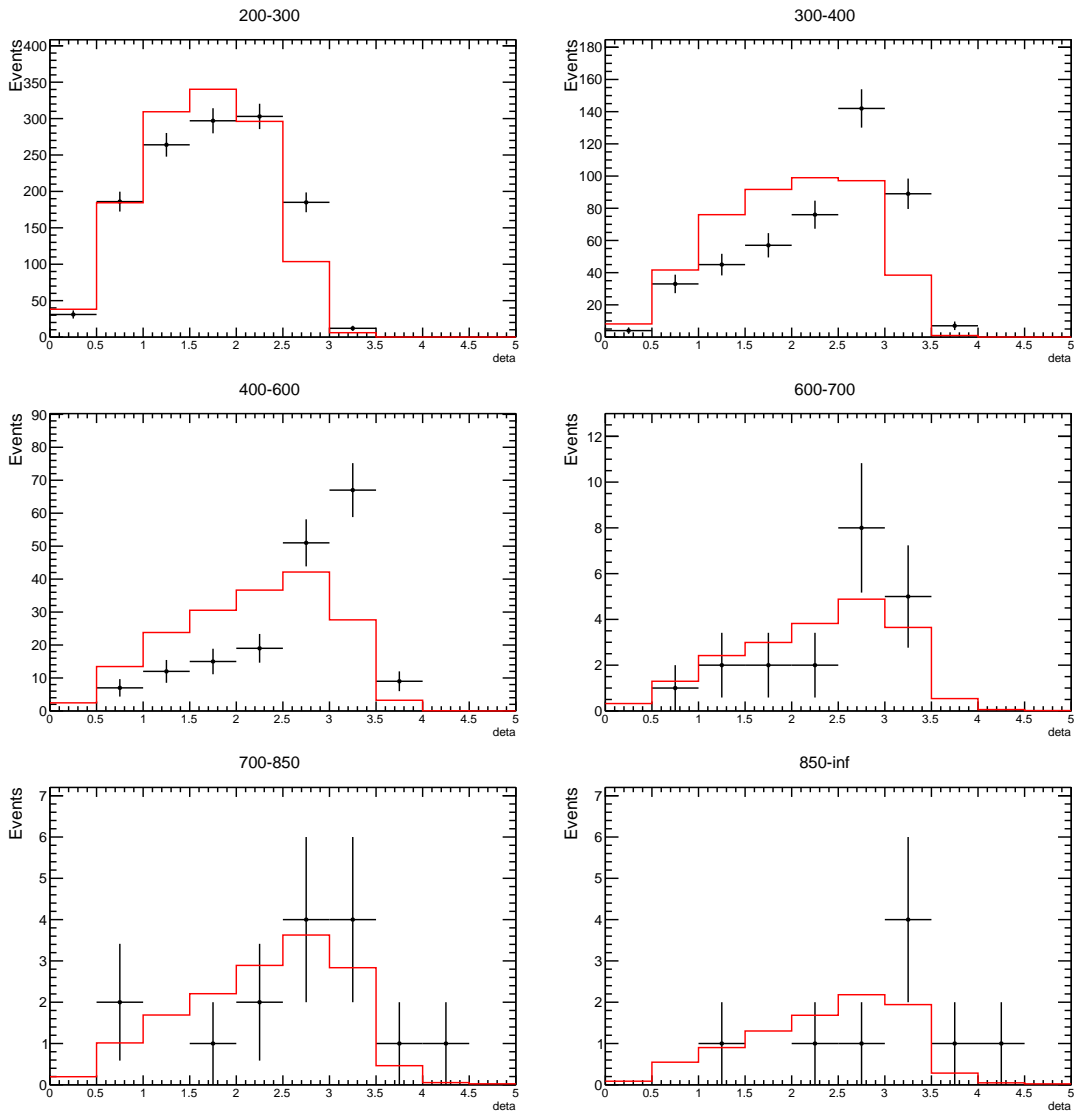


325 5.3.4 Pt2

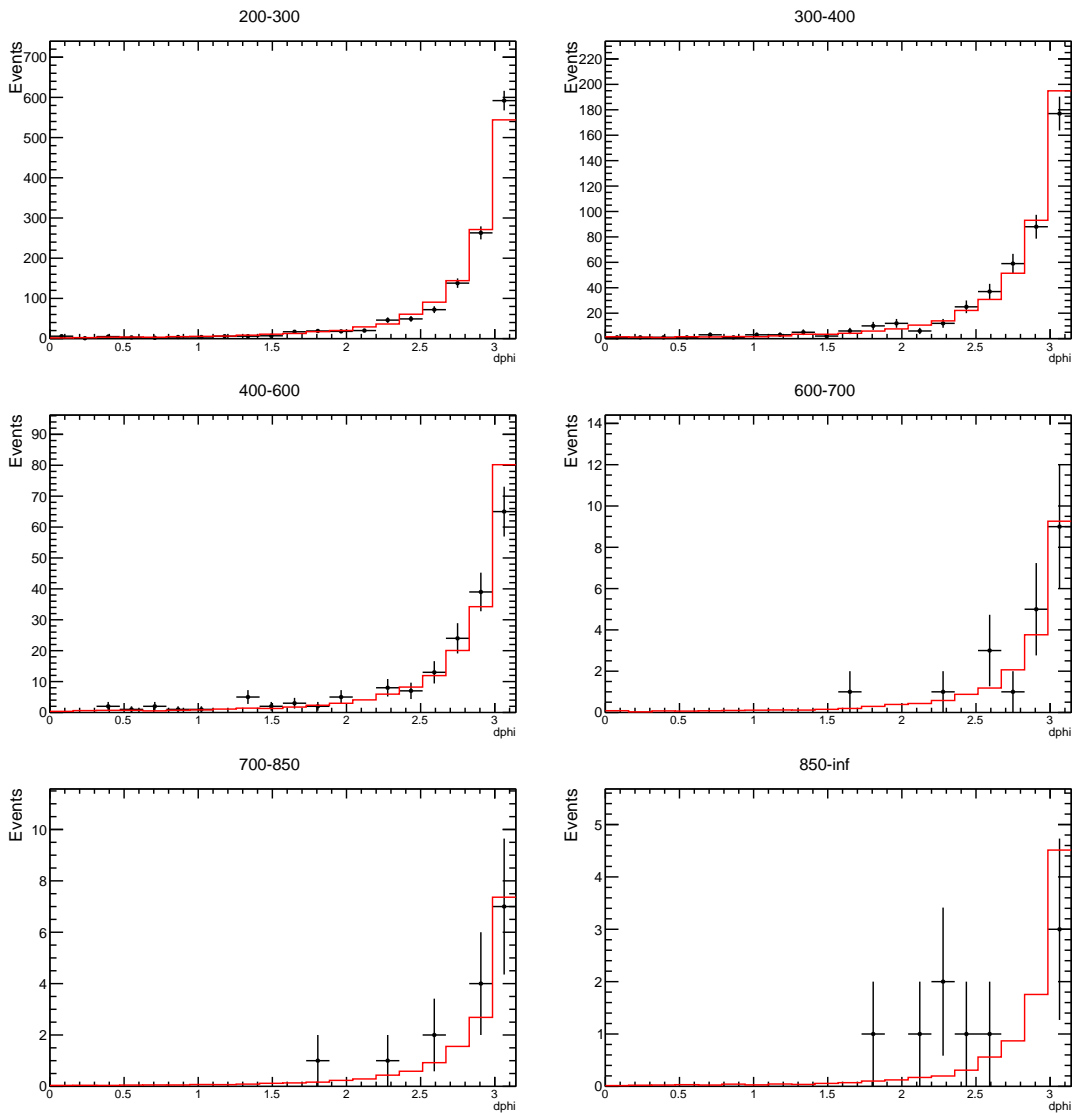




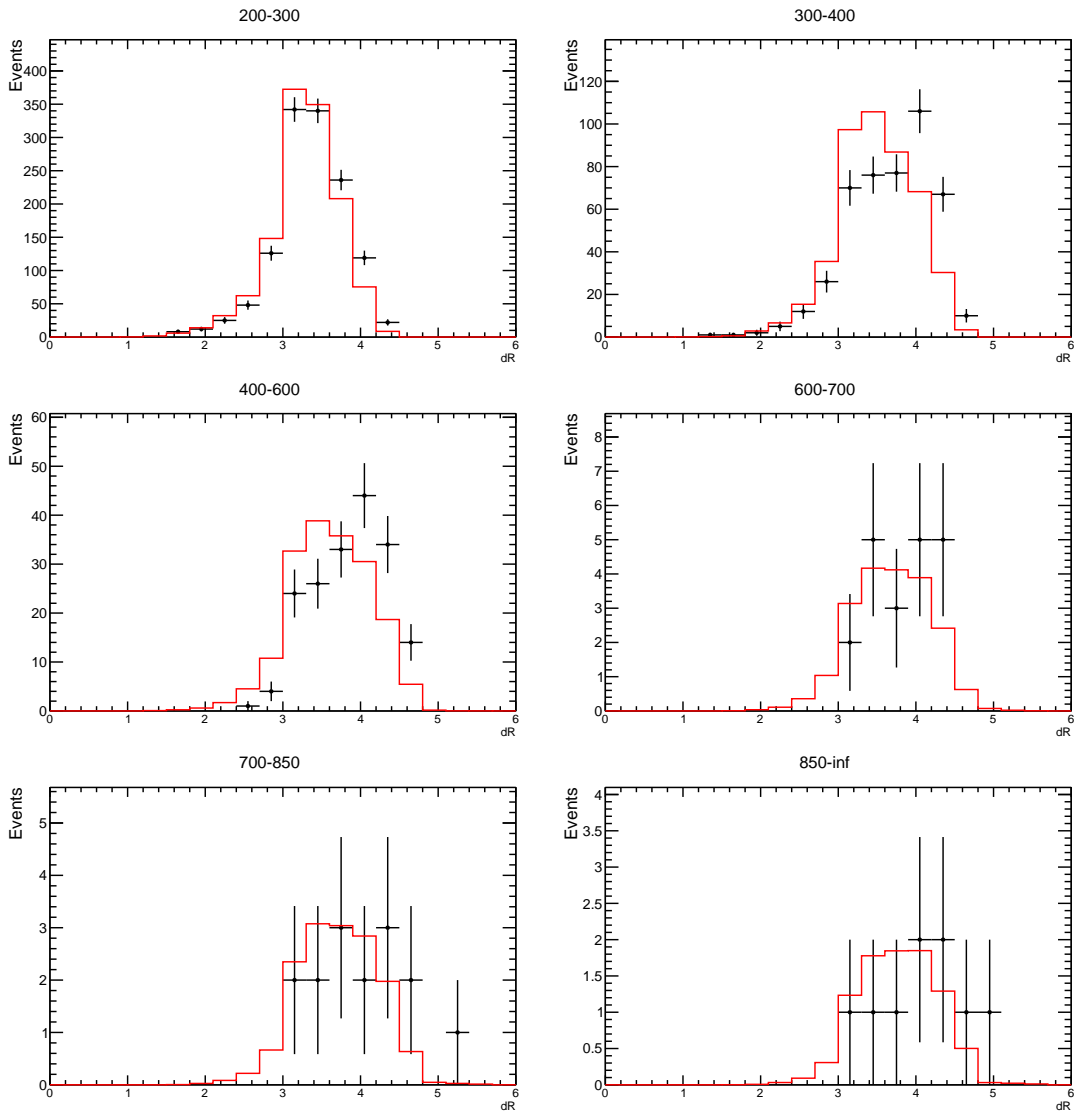
326 5.3.5 Deta



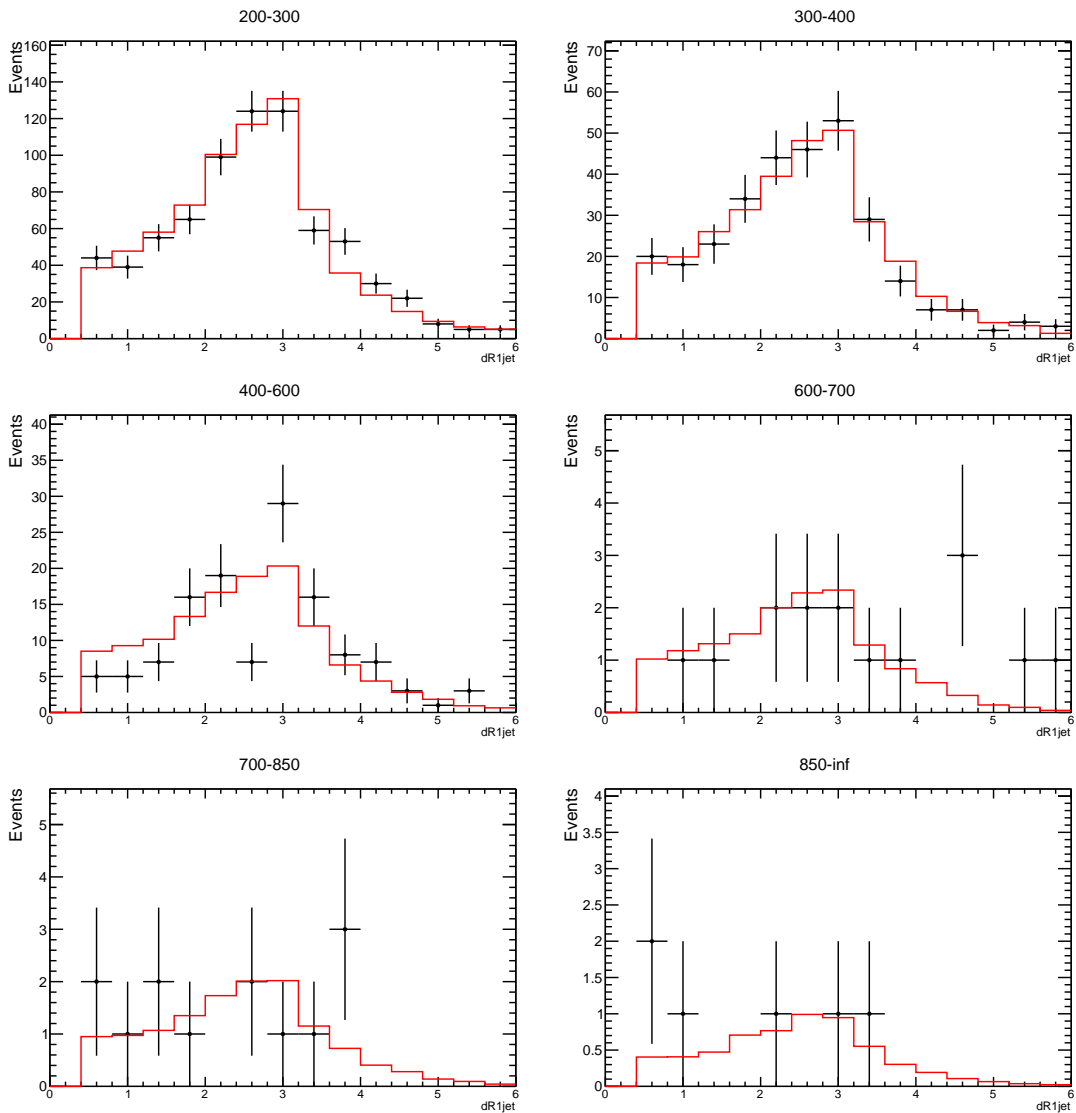
327 5.3.6 Dphi



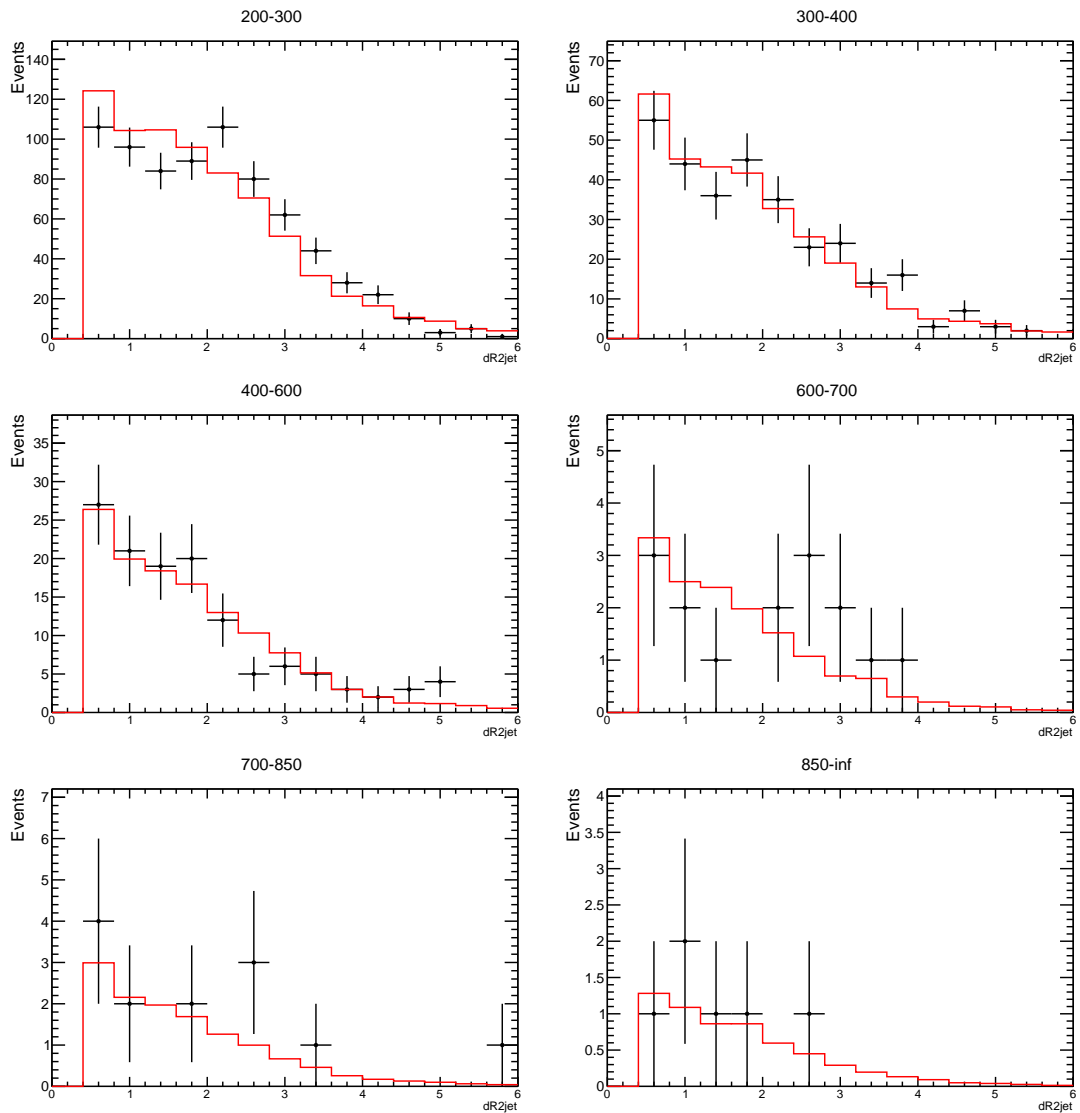
328 5.3.7 DR



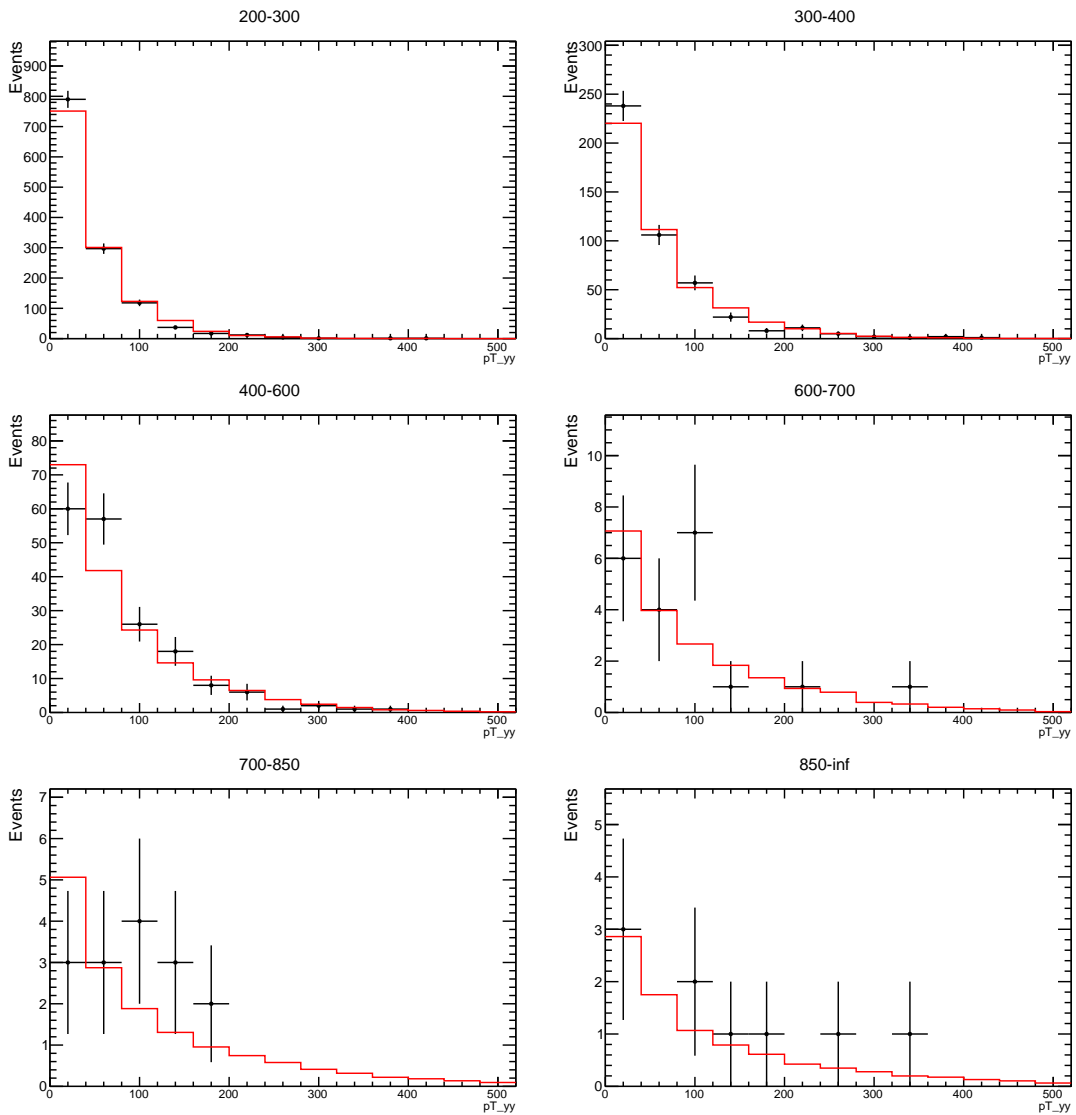
329 5.3.8 DR1jet



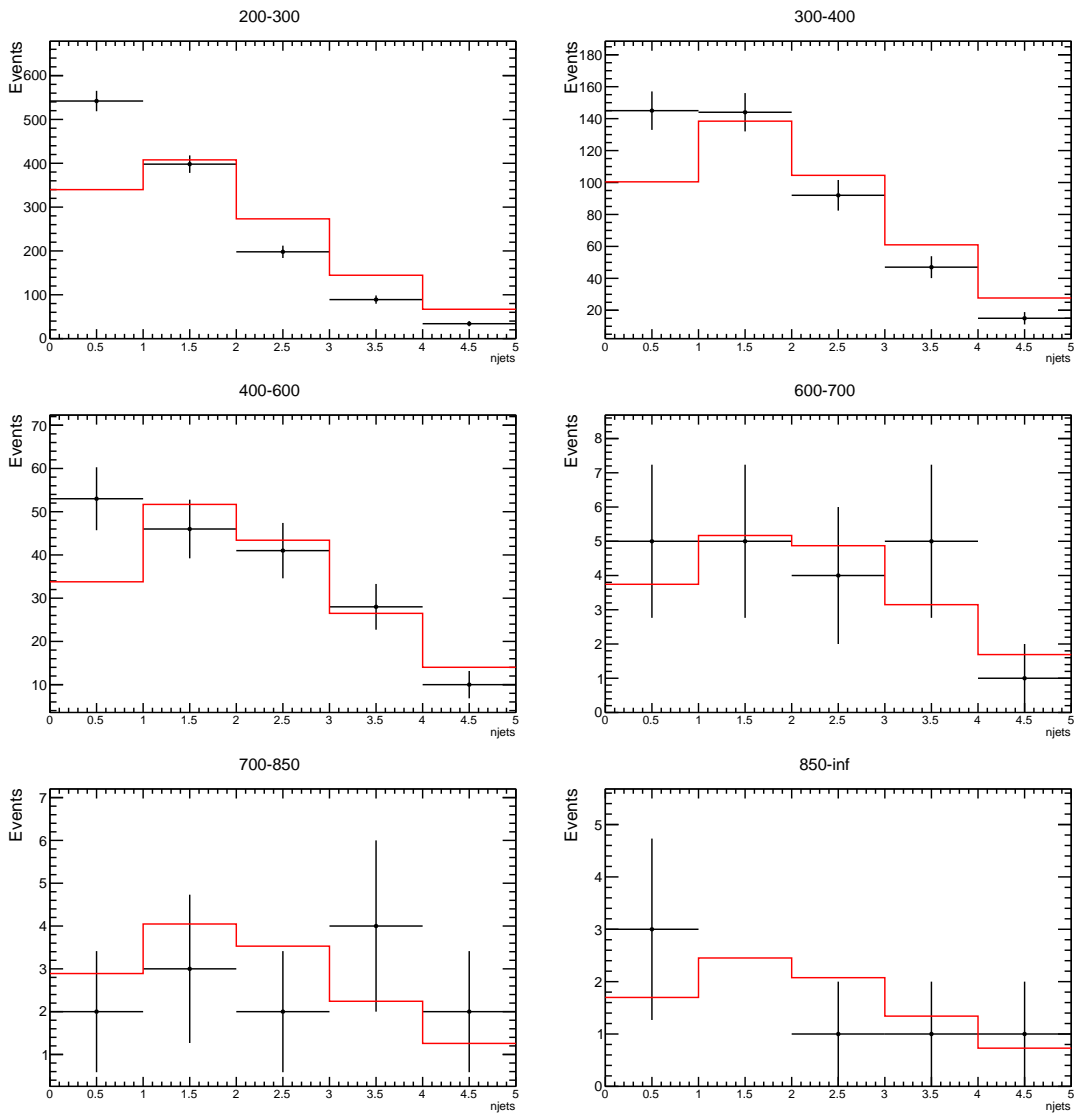
## 330 5.3.9 DR2jet



331 5.3.10 ptyy

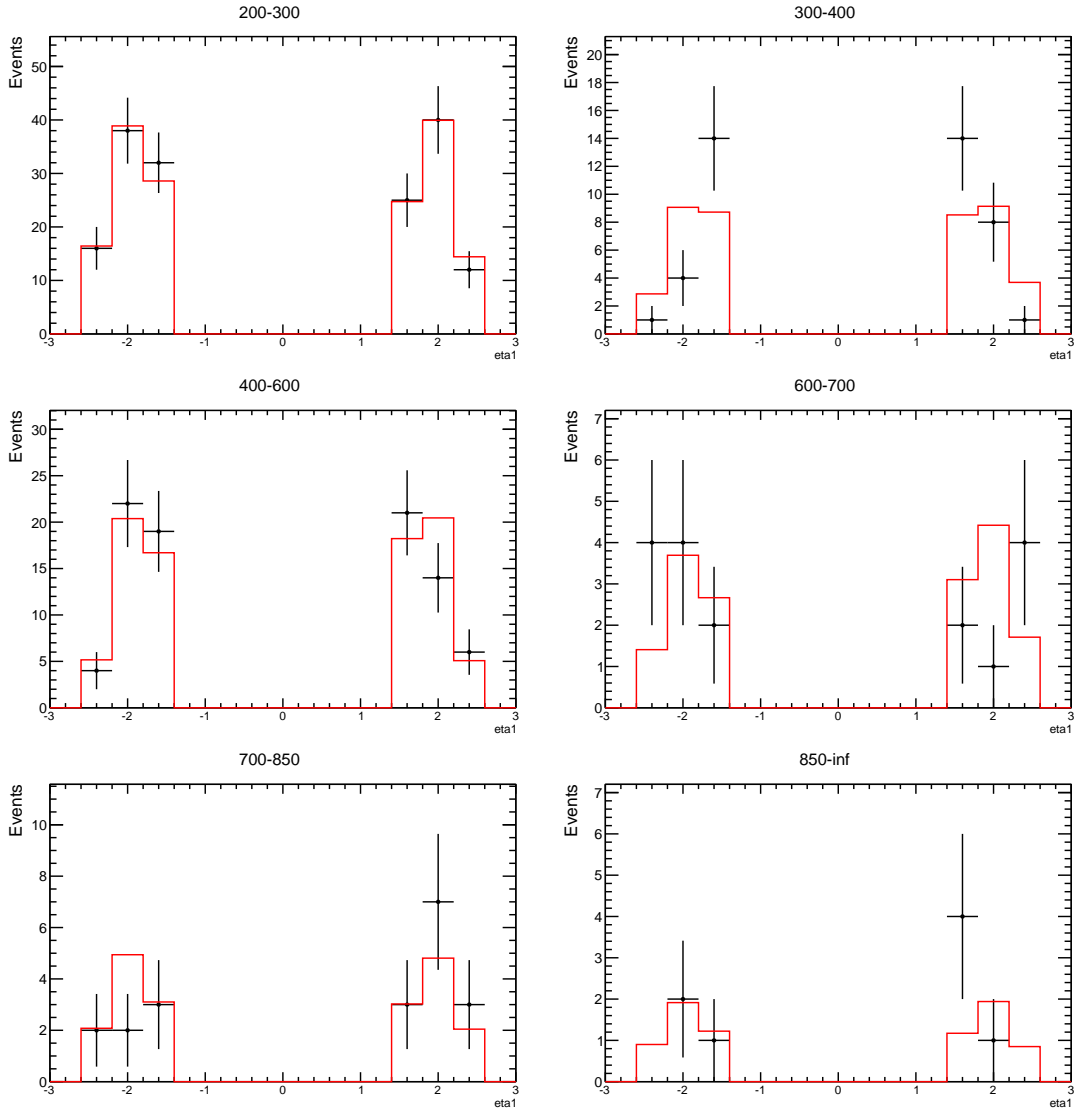


332 5.3.11 Njets



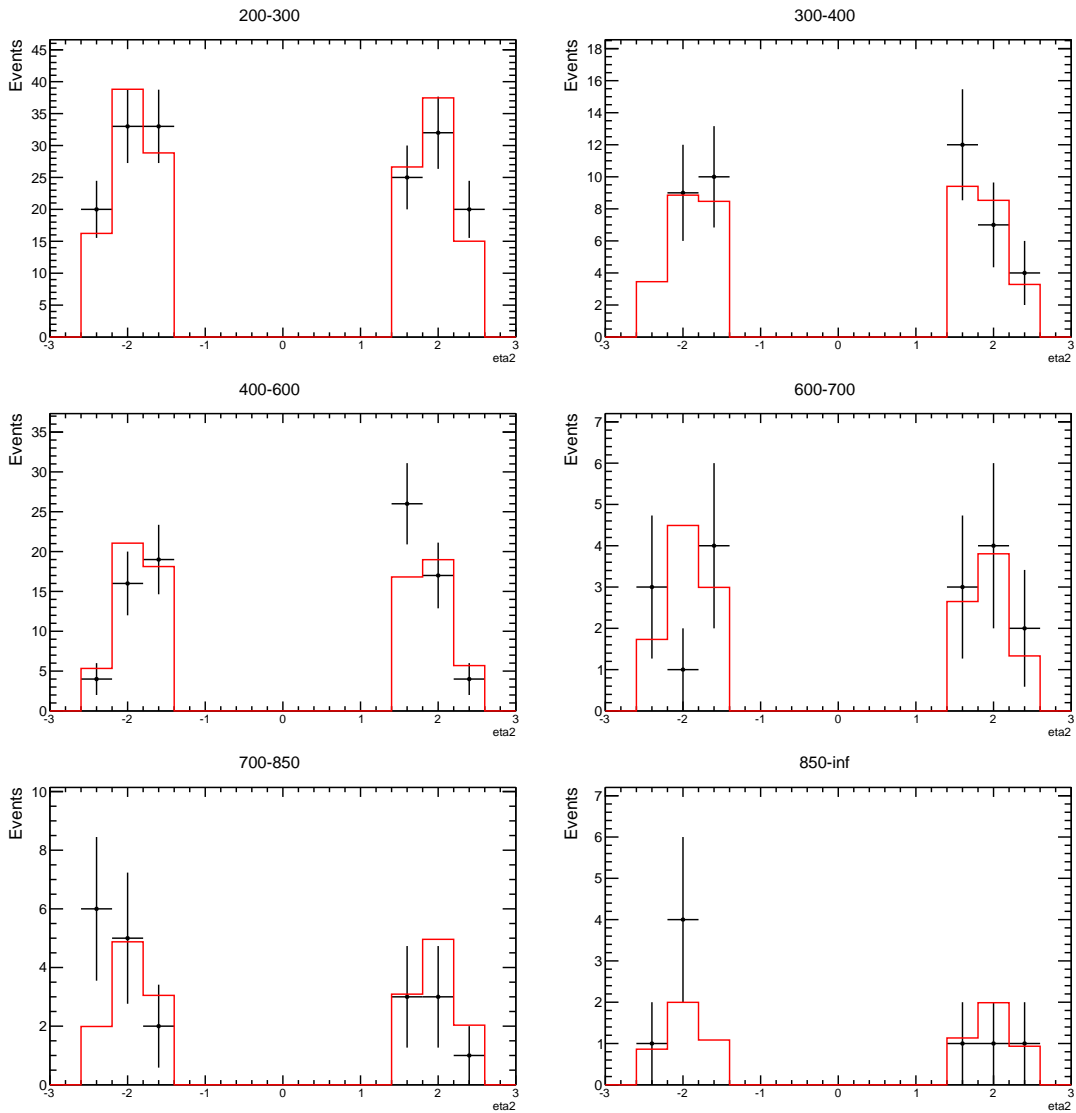
333 **5.4 EE**

334 **5.4.1 Eta1**

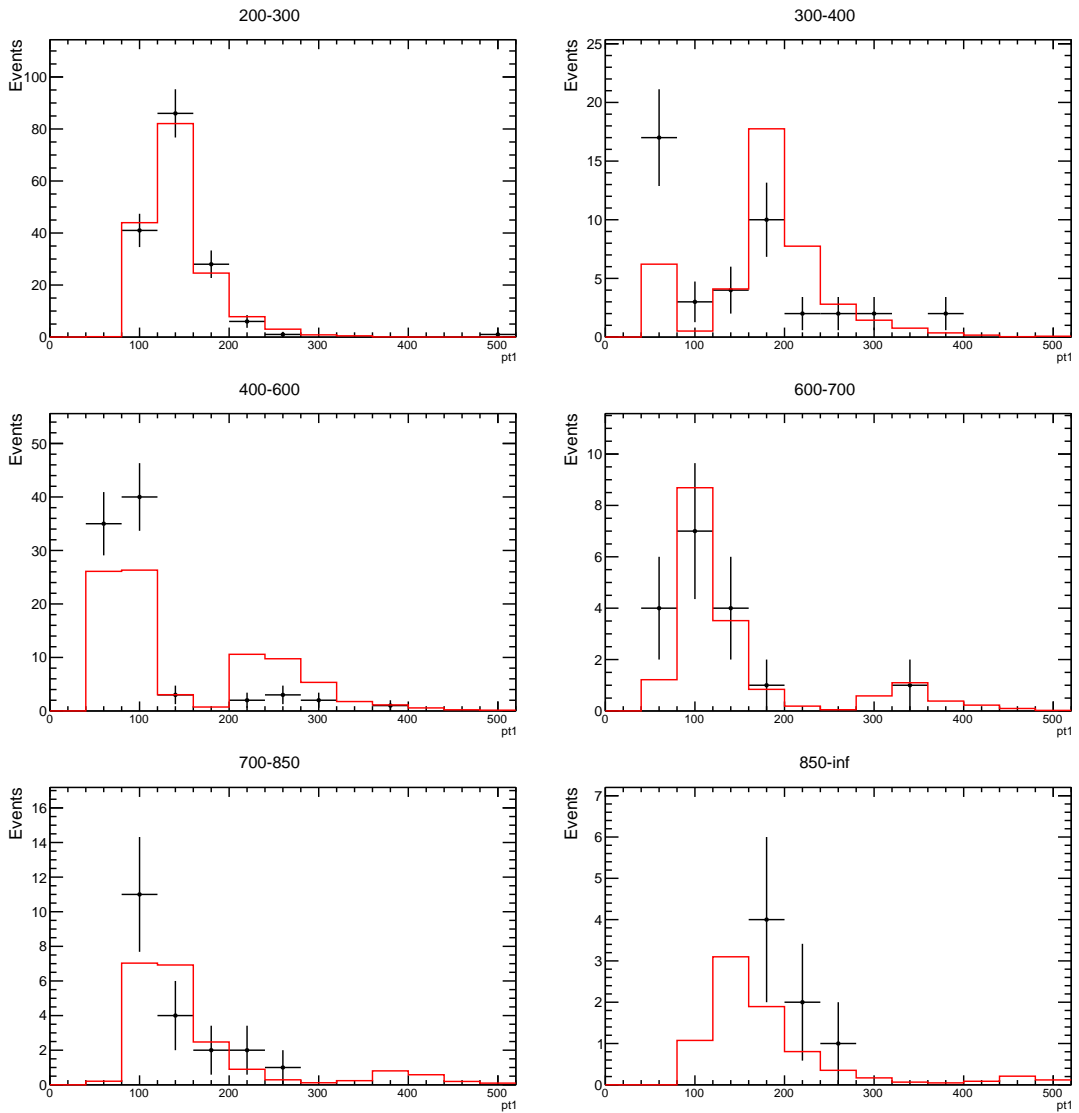




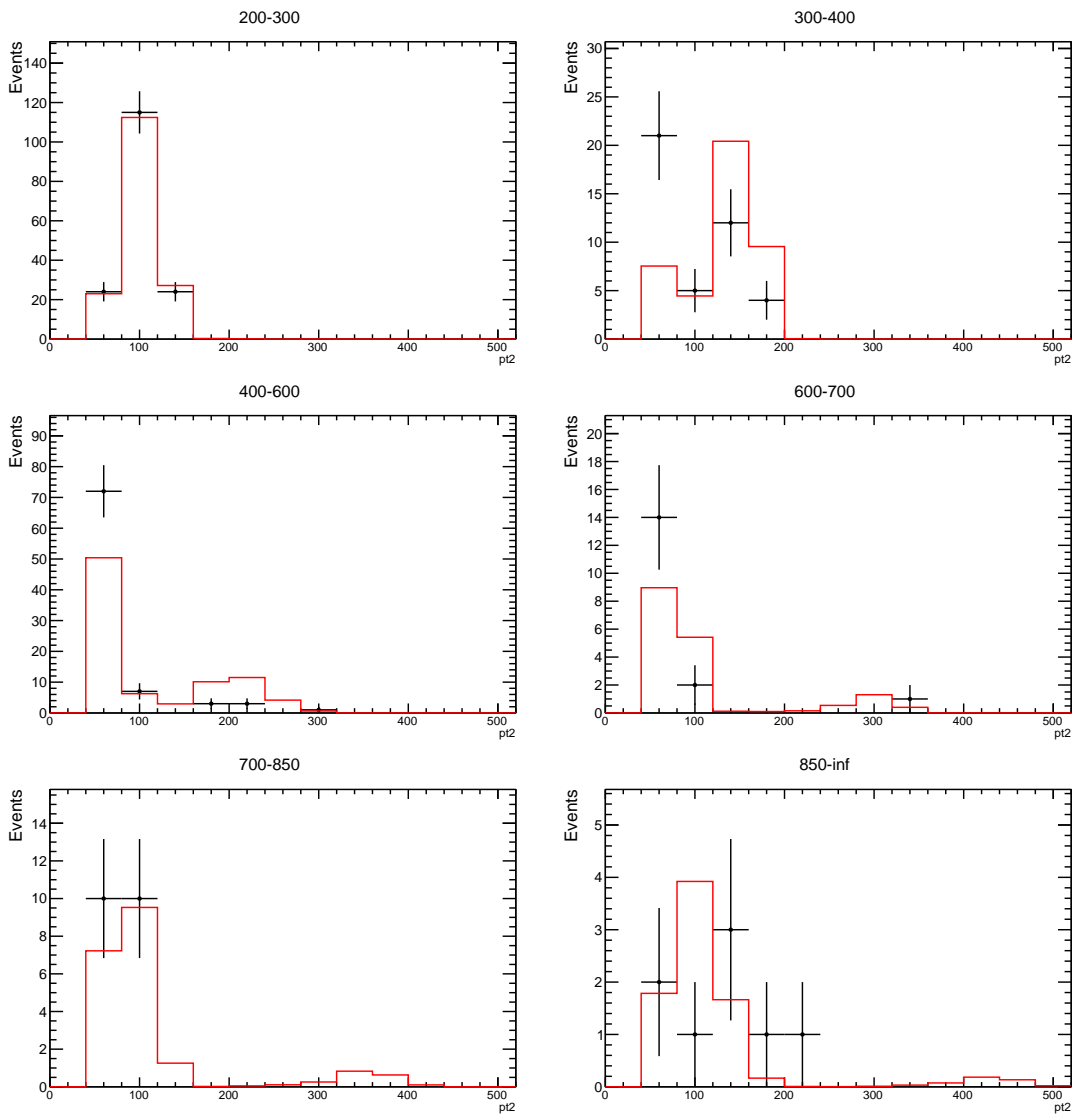
335 5.4.2 Eta2



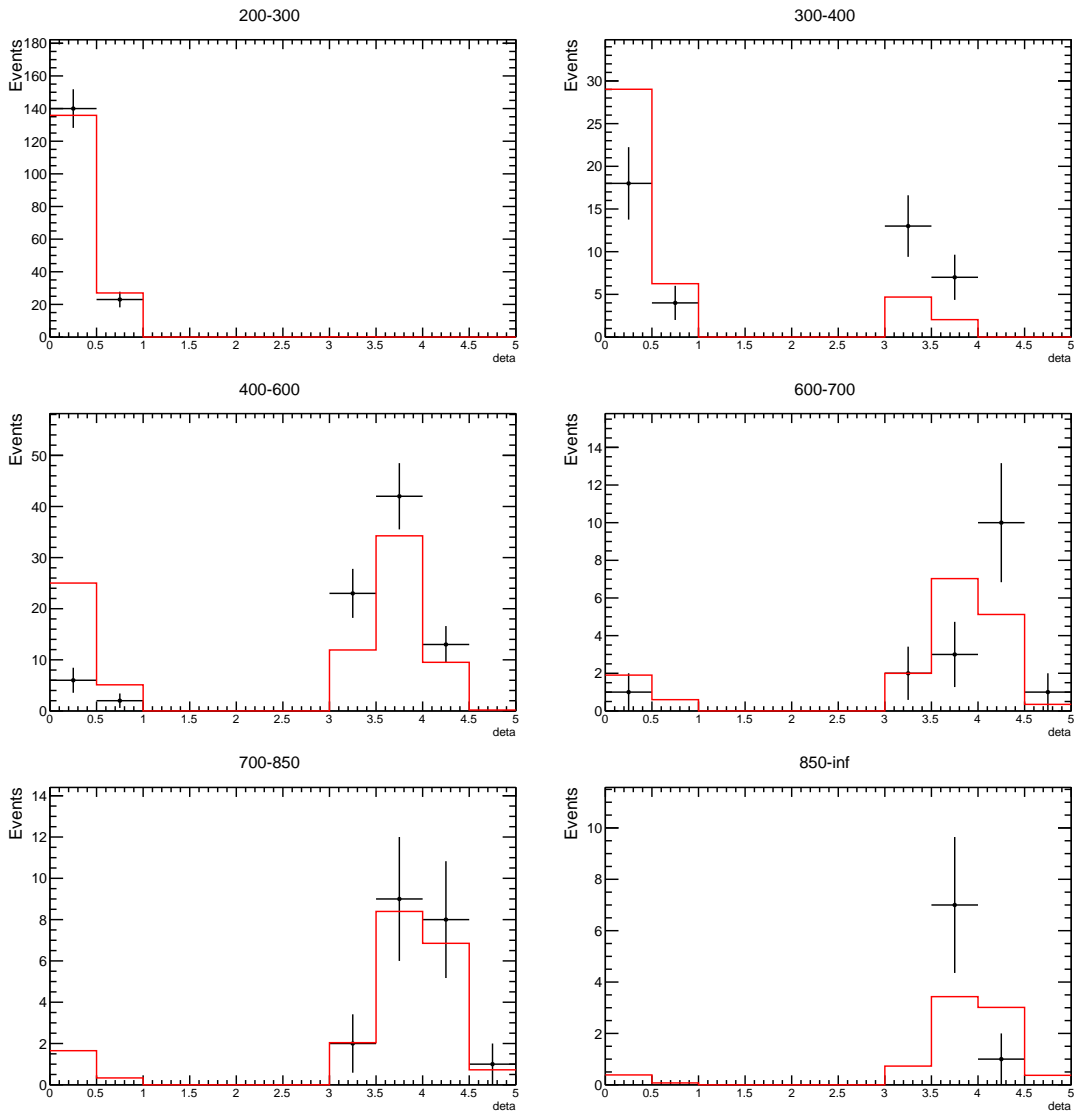
336 5.4.3 Pt1



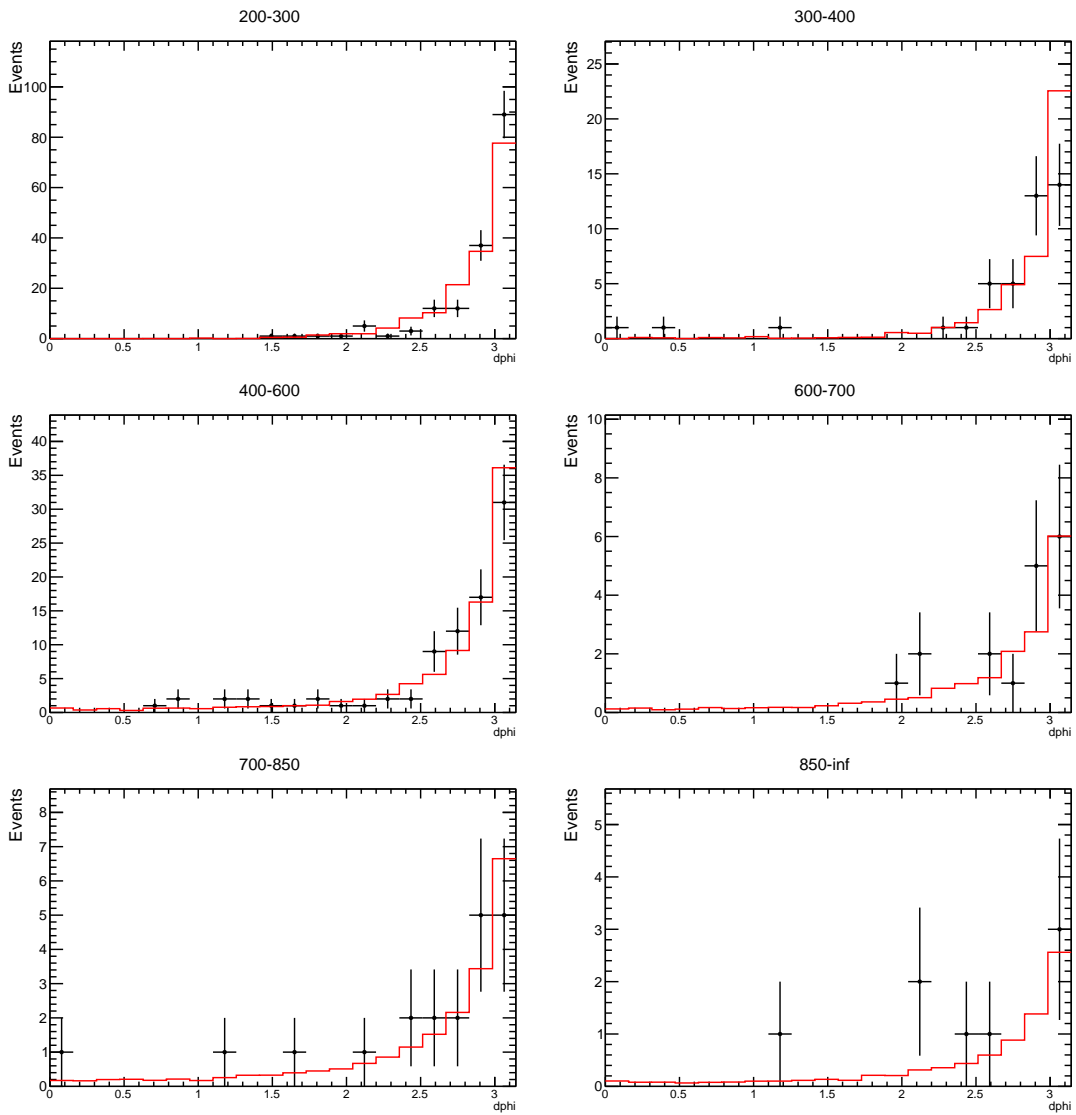
337 5.4.4 Pt2



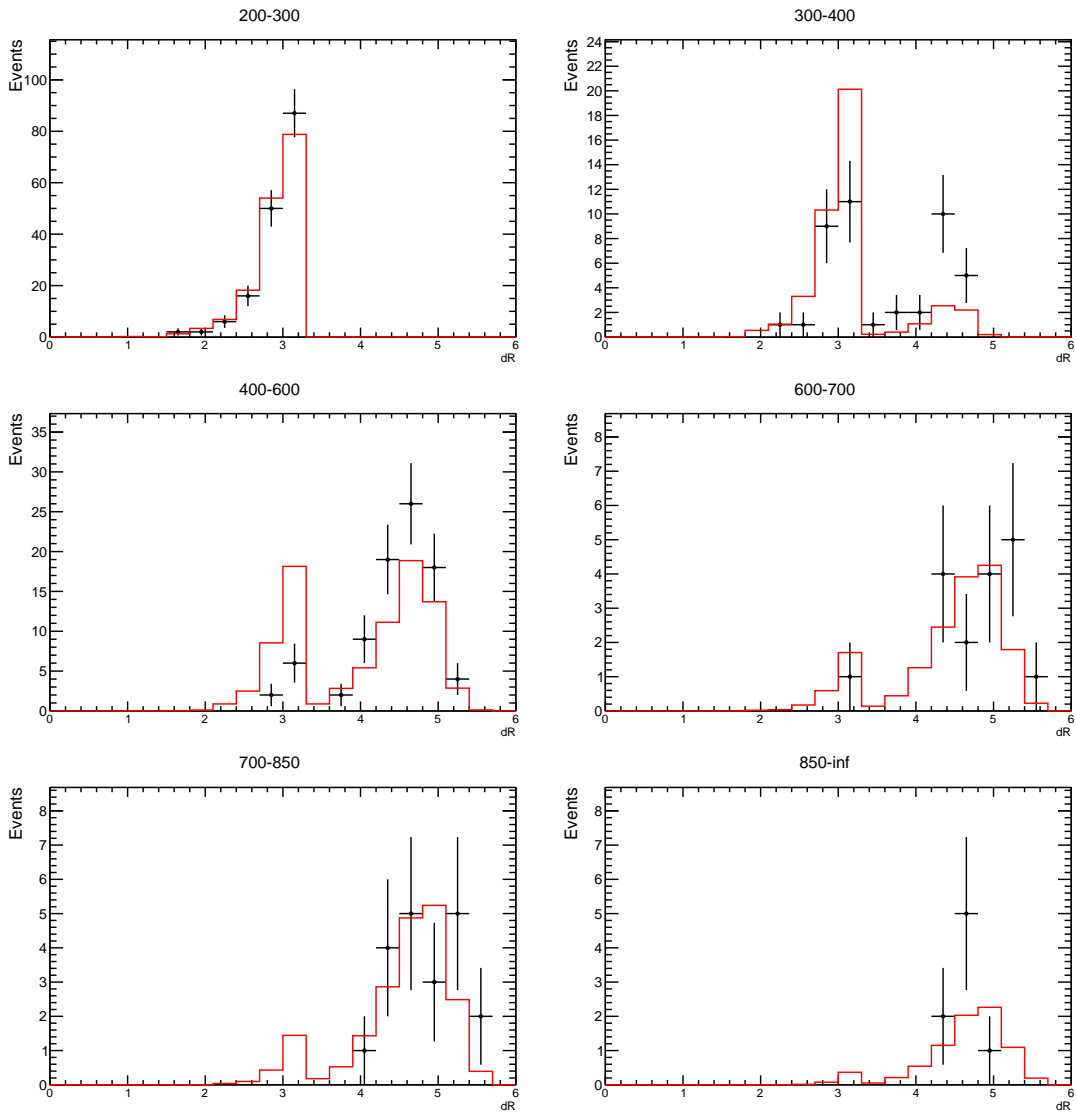
338 **5.4.5 Deta**



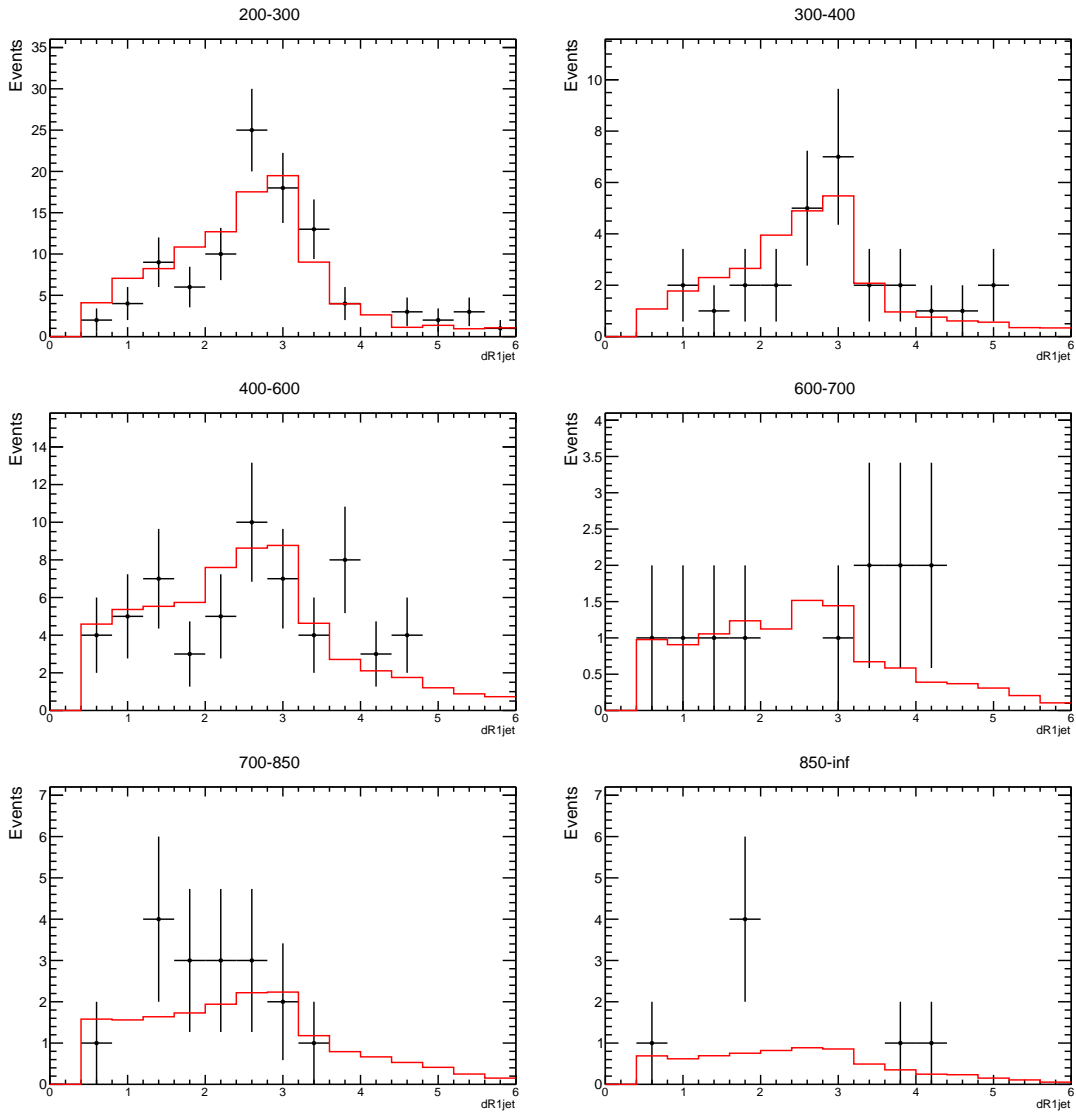
339 5.4.6 Dphi



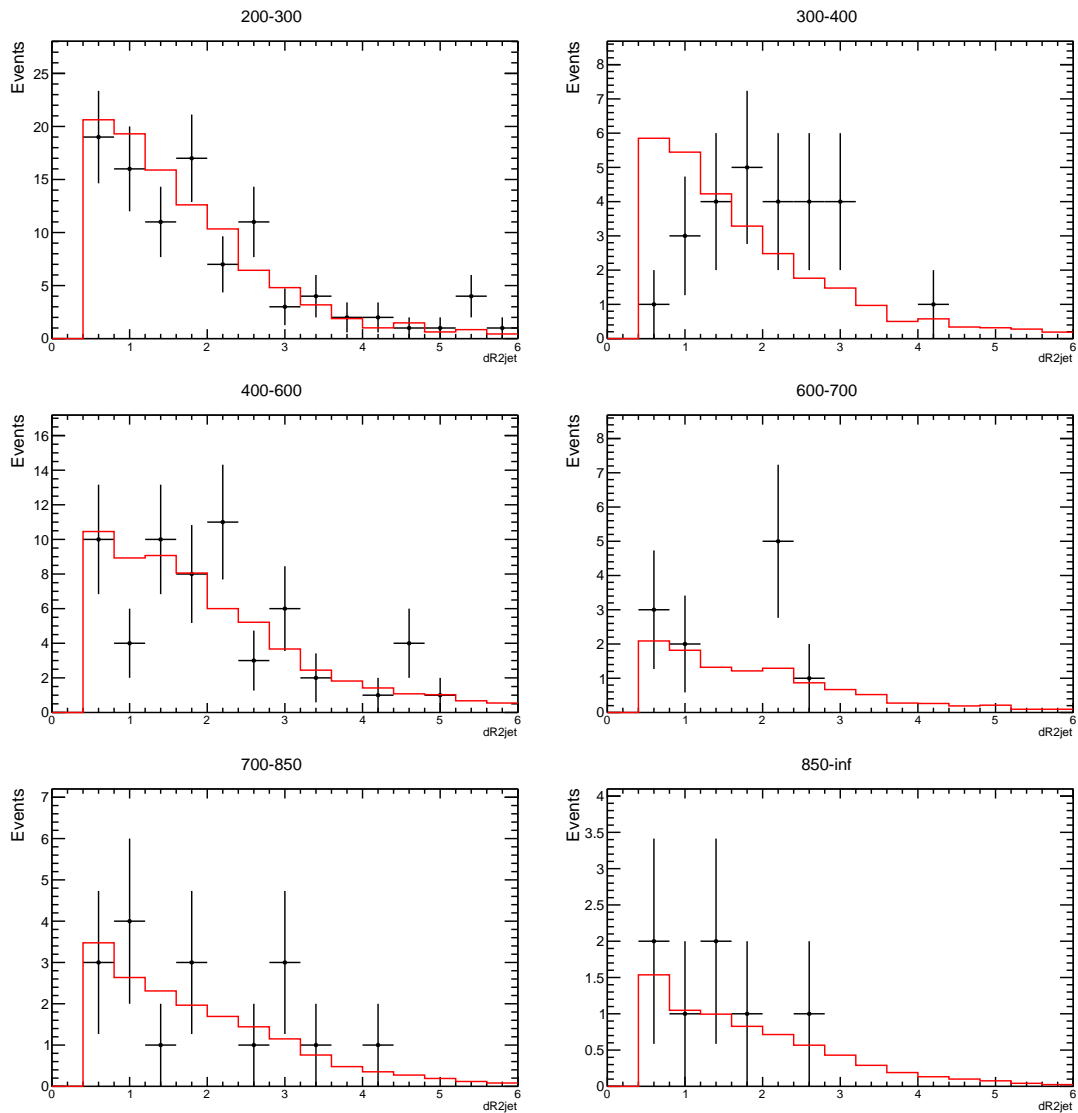
340 5.4.7 DR



341 5.4.8 DR1jet

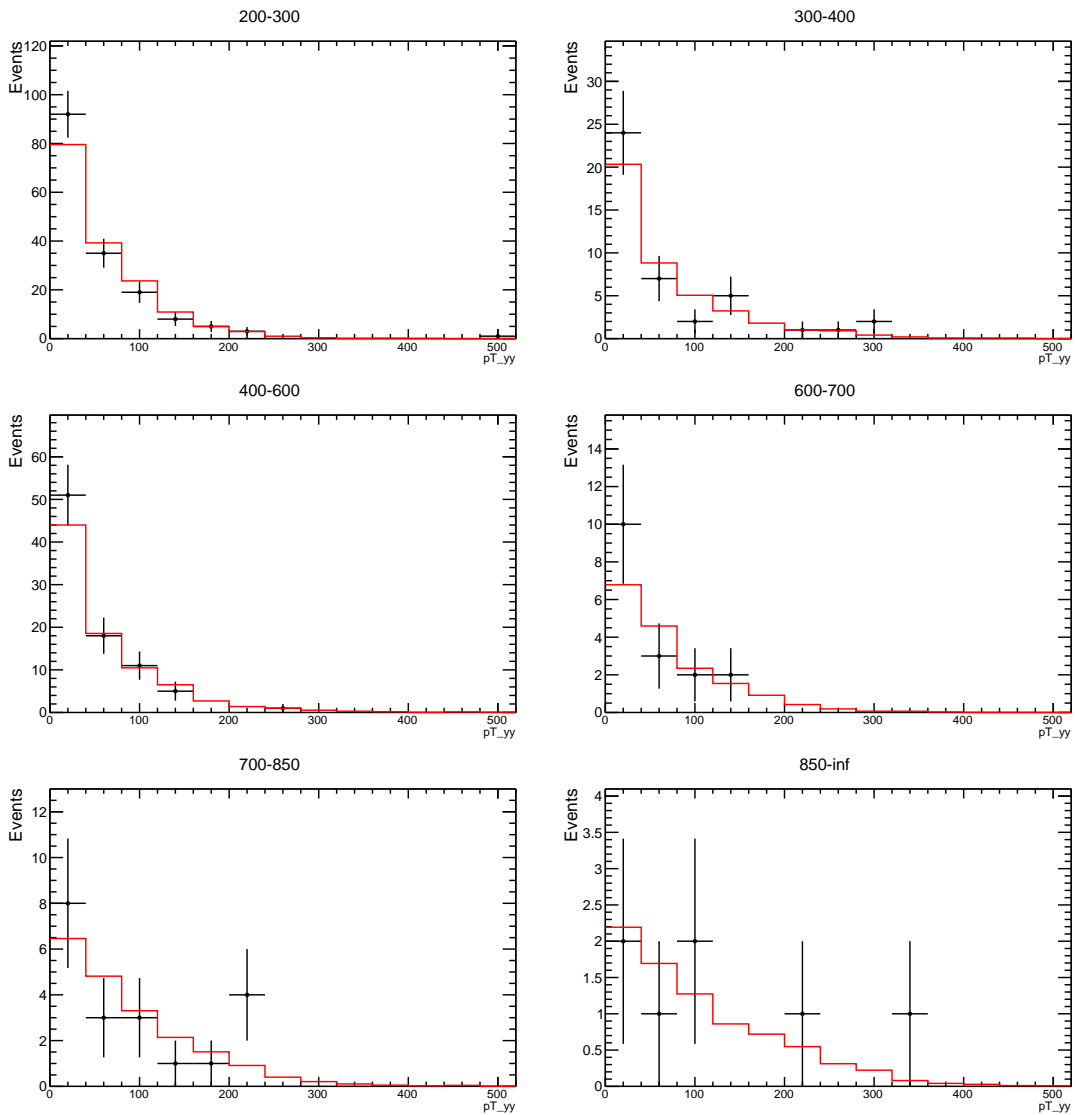


342 5.4.9 DR2jet





343 5.4.10 ptyy



344 5.4.11 Njets

