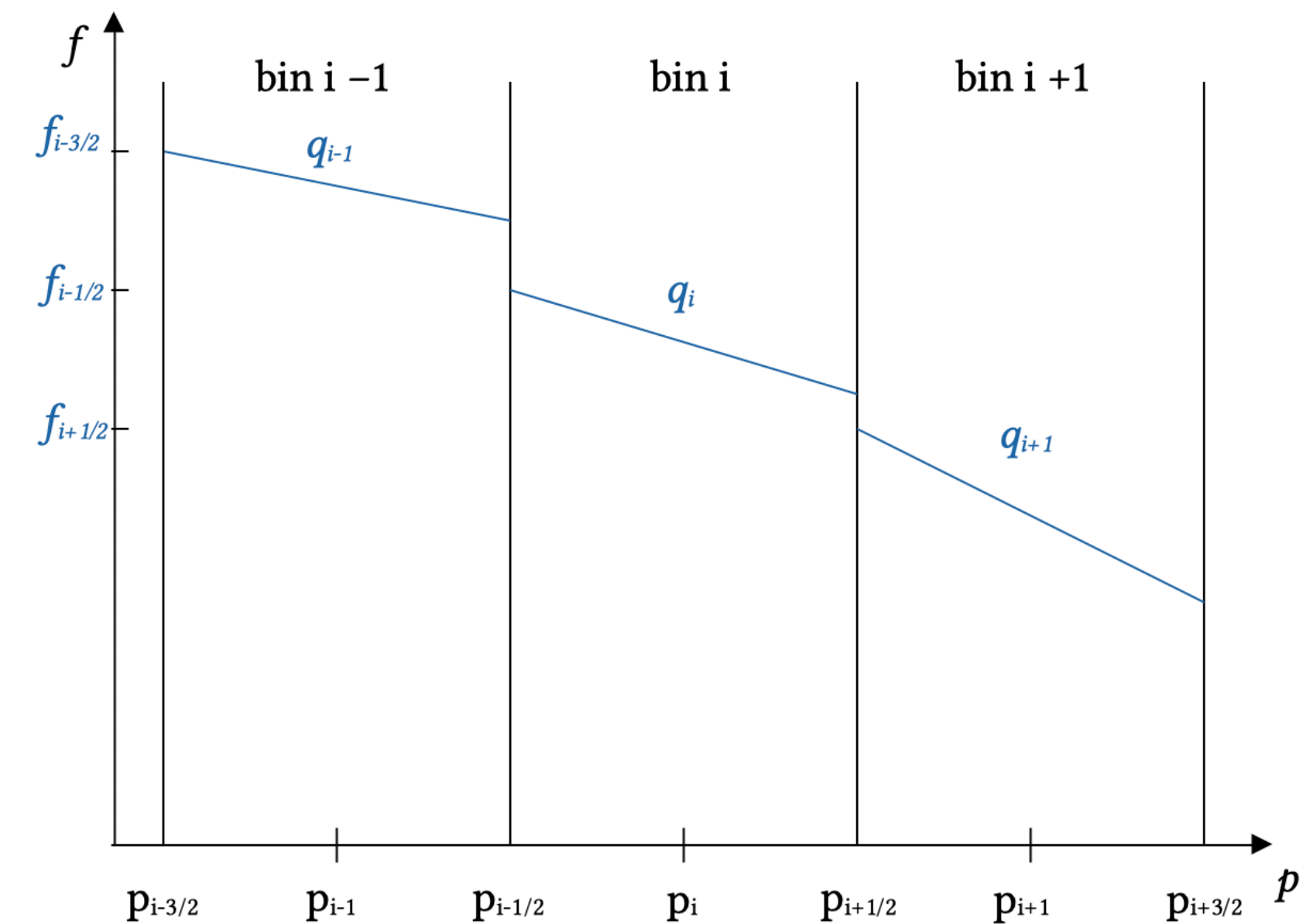


Feedback in galaxies: the role of cosmic rays

Nimatou Seydi Diallo and Yohan Dubois

- Cosmic rays (CRs) are an important energy component of galaxies
- CRs could be an important source of feedback in galaxies
- Their effect on galaxy dynamic is highly dependent on their transport properties such as diffusion and streaming

$$f(p) = f_{i-1/2} \left(\frac{p}{p_{i-1/2}} \right)^{-q_i}$$



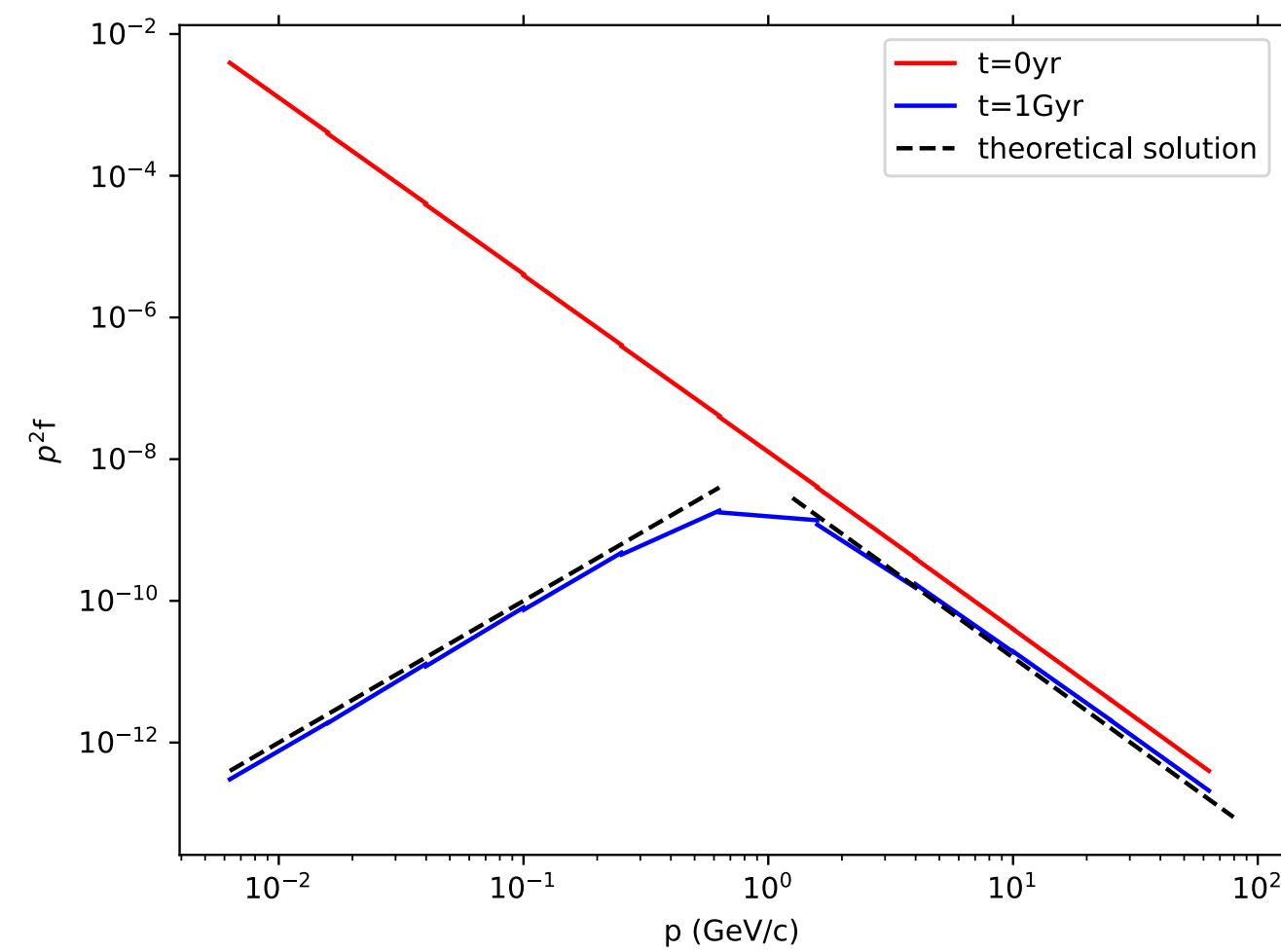
Evolution of $(f_{i-1/2}, q_i) \Leftrightarrow$ Evolution of (e_i, n_i)

Model the momentum distribution function $f(p, t)$ and follow its evolution in the RAMSES code

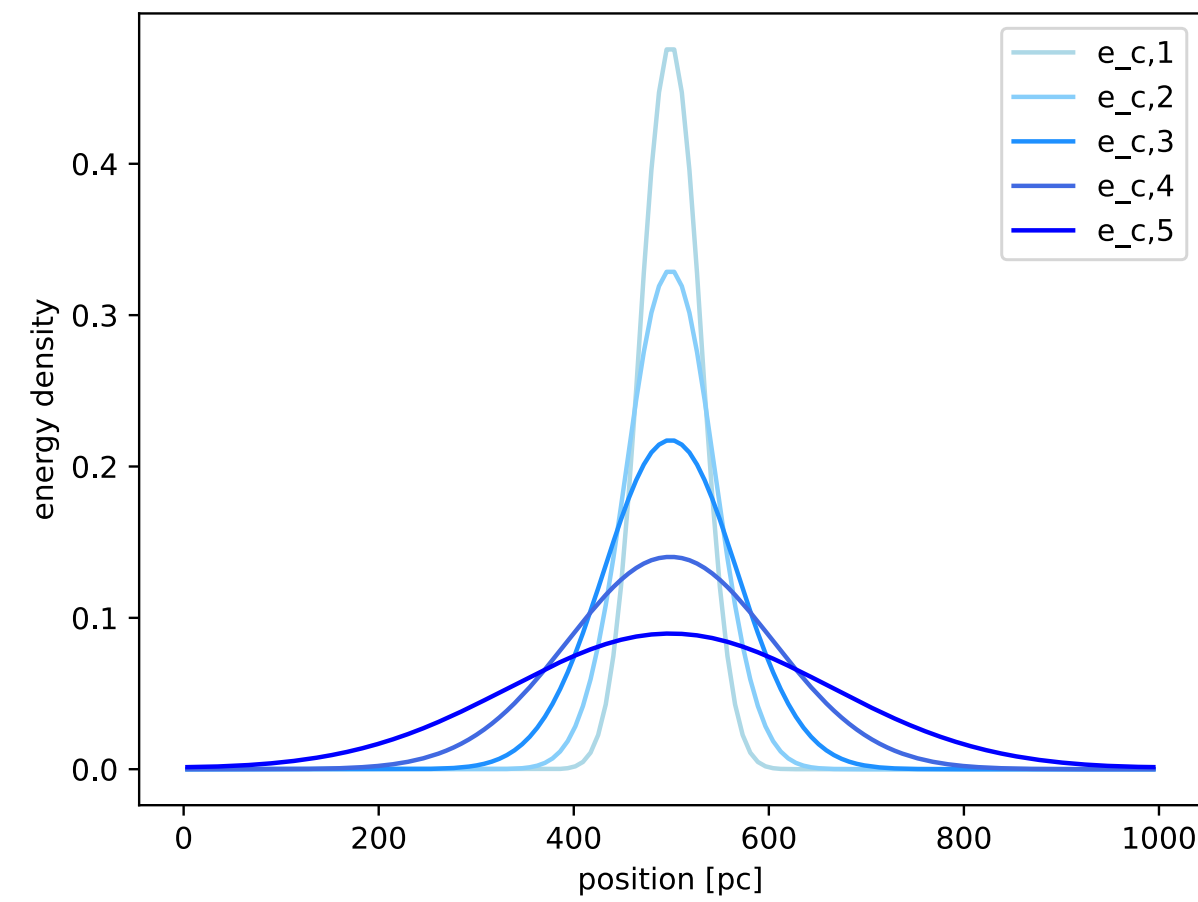
Feedback in galaxies: the role of cosmic rays

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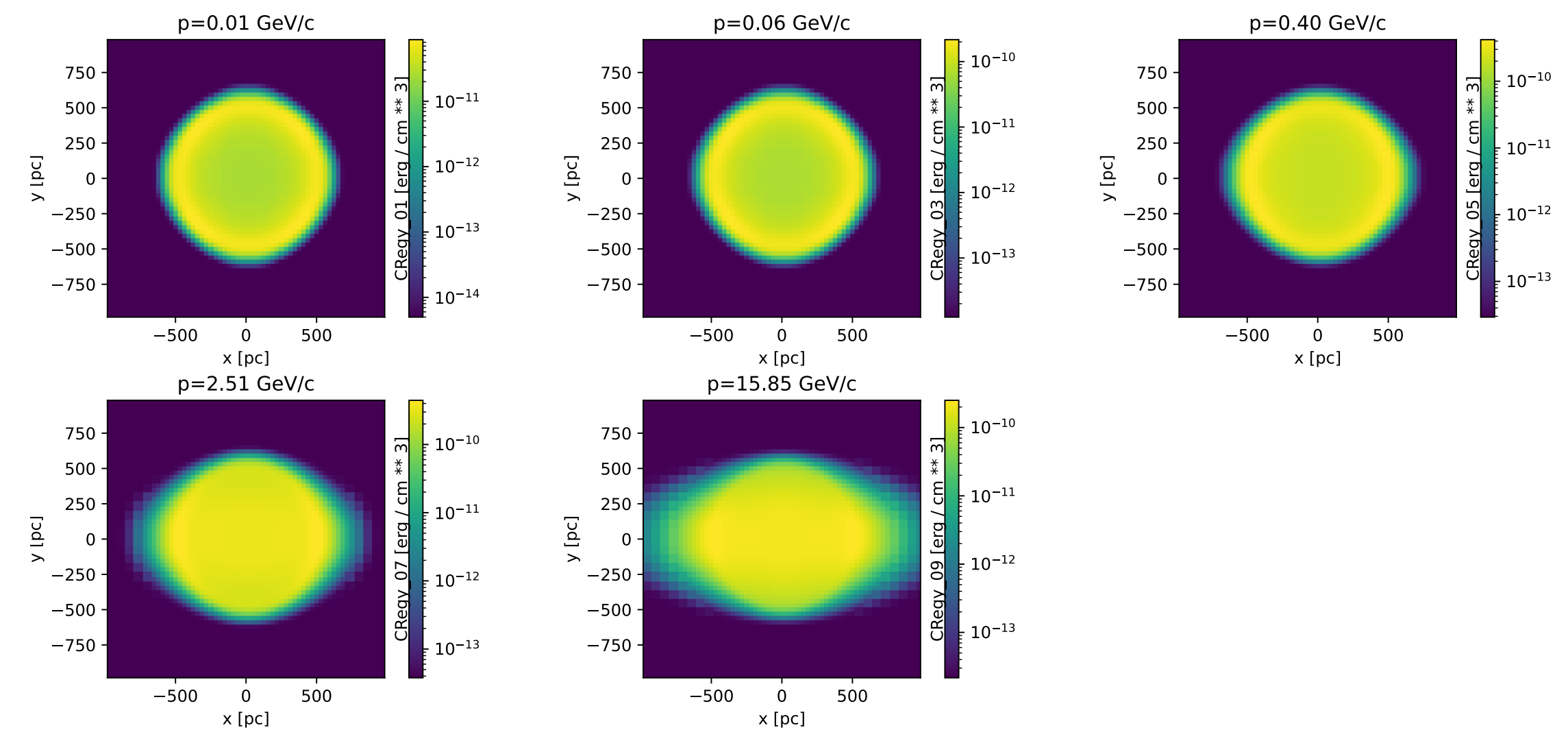
Free cooling test



1D diffusion test



2D Sedov explosion



Reproduce previous work that studied the influence of CRs but with the spectral method