cosmogenic neutrinos

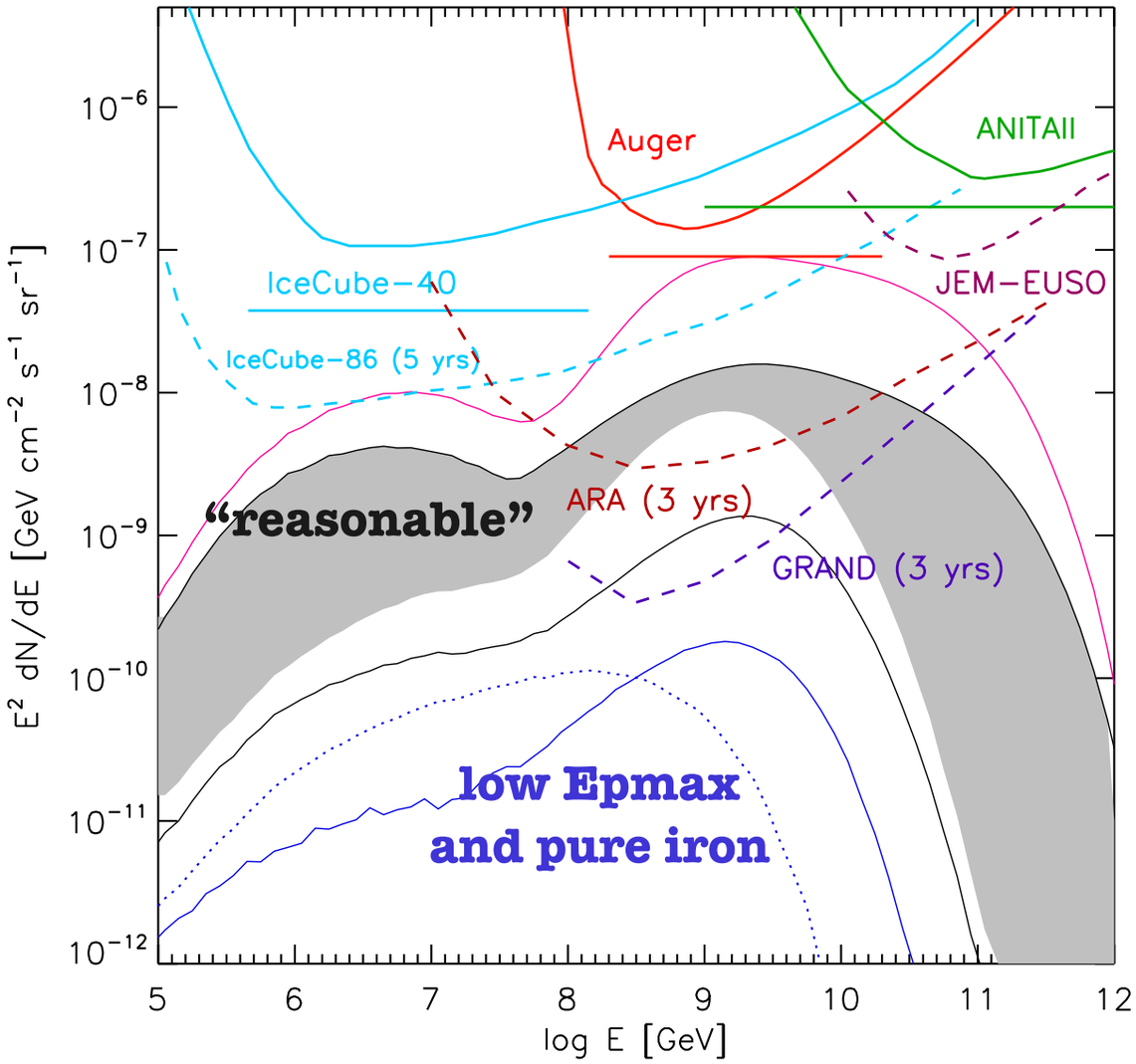
Wishes A)

homework 1

- 100 cosmogenic neutrinos/yr in "reasonable range" → size of array? feasibility? cost?
- reach the "bottom" line
- energy resolution → ? (IceCube method to get better resolution?)
- lower energy threshold?

homework 2

how does a cosmogenic neutrino spectrum with 50% energy resolution look like?
above what level can we still discriminate source characteristics?



diffuse neutrinos from sources

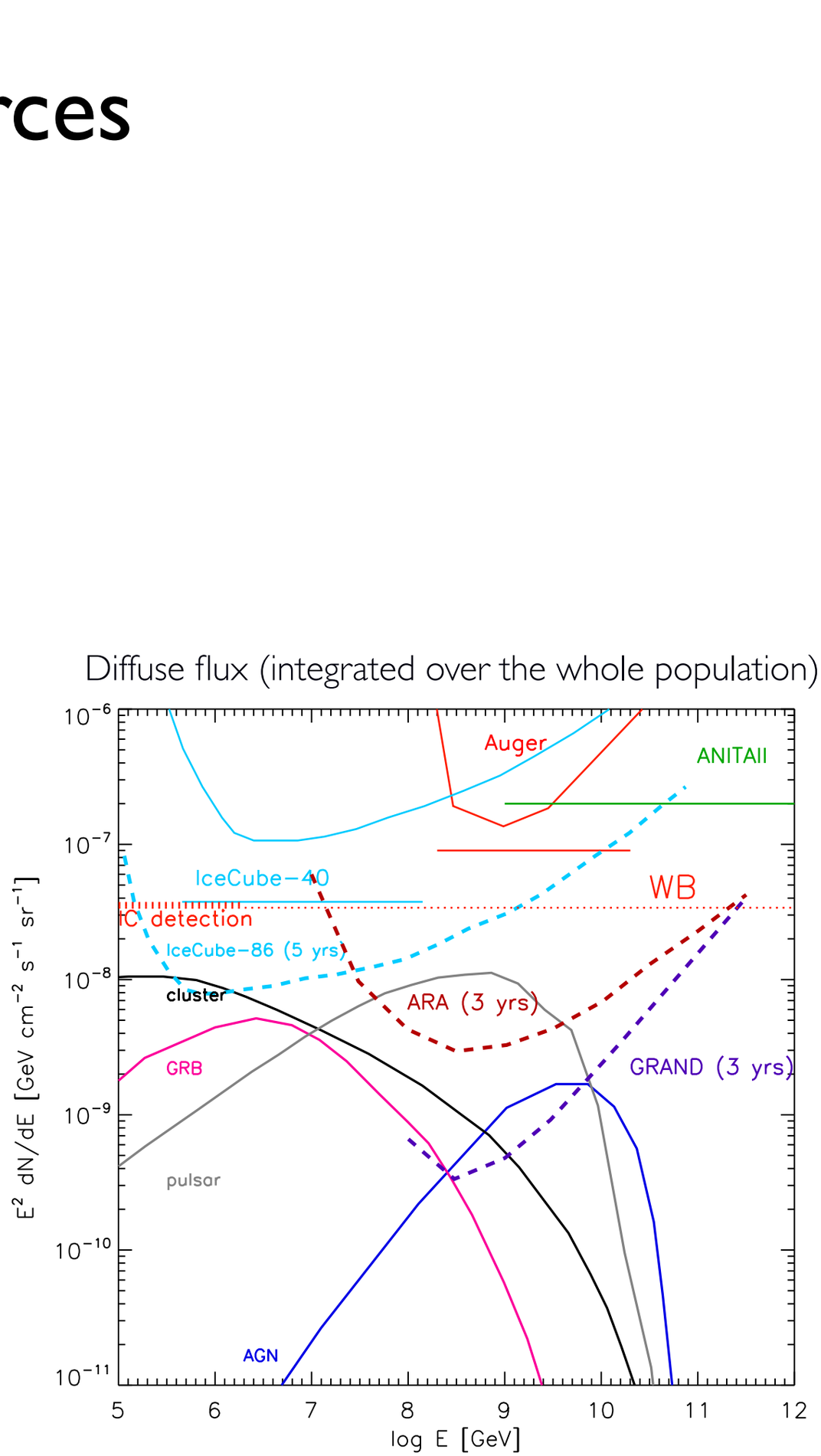
homework 1

census of most popular/promising source
and associated acceleration models +
neutrino prediction
----> evaluate the discrimination power
of GRAND for classes of models

homework 2

same but when stacking at position of
sources is considered

Diffuse flux (integrated over the whole population)



transients and neutrino astronomy

Wishes B)

- angular resolution < fraction of degree
- time resolution < ms
- good sky coverage and fov overlap with other instruments ⟵ ?????

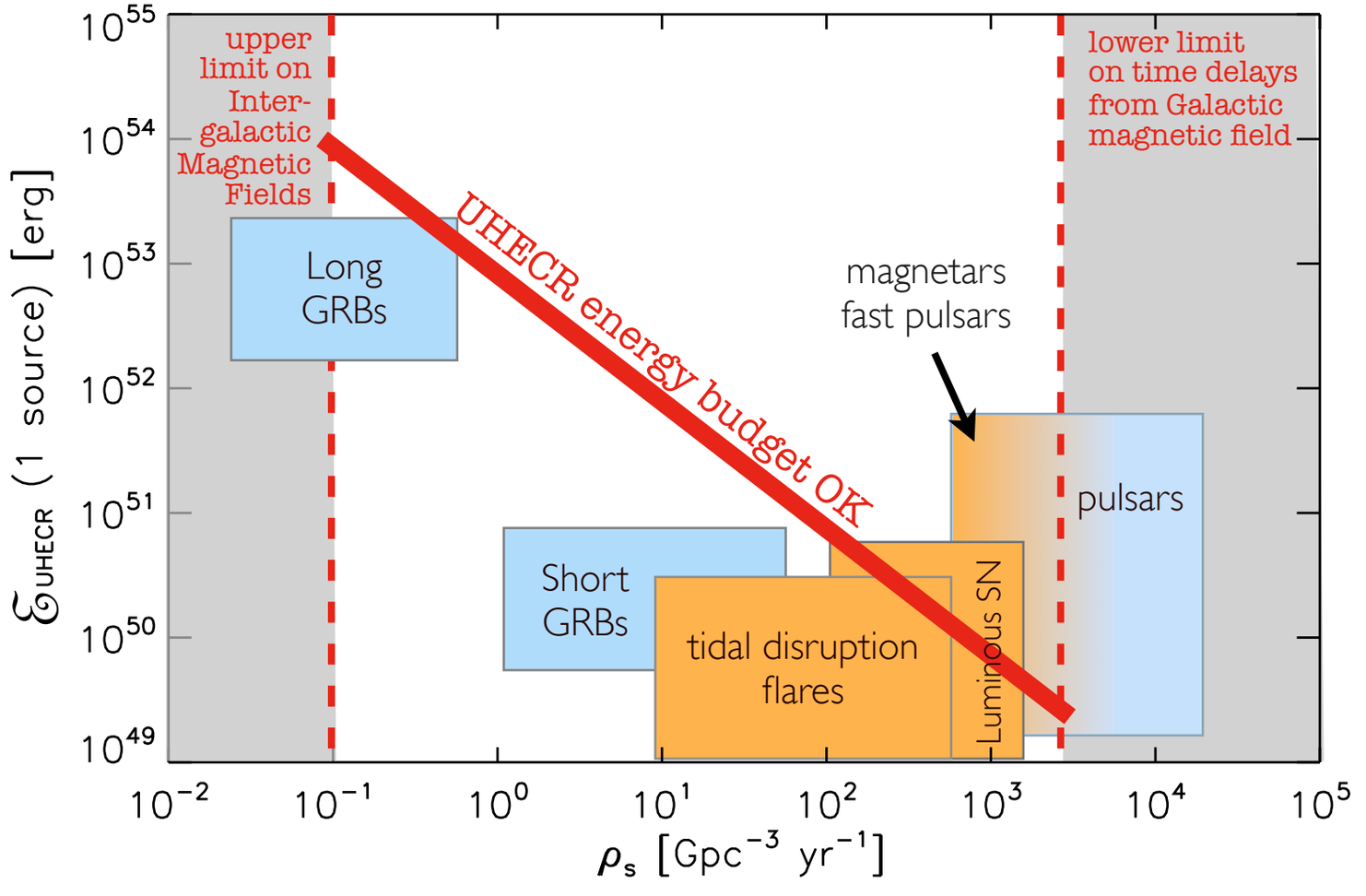
sending alerts for doublets etc. (Chad's talks)

homework

check coverage with other instruments

optimal sky coverage? (many patches
of sites in neighboring mountains?
if one single site?)

for each class of transient, probability
of seeing one with GRAND?
for blind search?
at position of existing transients?



science cases other than HE neutrinos

Wishes C)

(Joe/Anastasia/Yi/Xiang-Ping/Françoise)

- reionization? (maybe use a subset of GRAND?)

- fast radio bursts?
(>~ 200 MHz, many bands, clusters of antennas to measure distances) --> GRAND could do well because of extension

- SKA science case (cosmic magnetism? --> many bands, spectro-polarimetry)

homework

calculate GRAND sensitivity in Jy.kpc2

⟶ what characteristics needed?

cost of adding additional characteristics needed

Wishes D) (Thierry)

UHECRs? ---> for calibration to start with