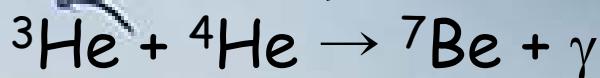
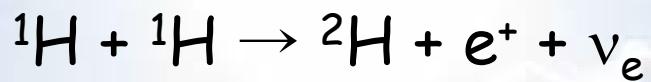


Searching for resonances in the unbound ${}^6\text{Be}$ nucleus

Kyung Yuk Chae

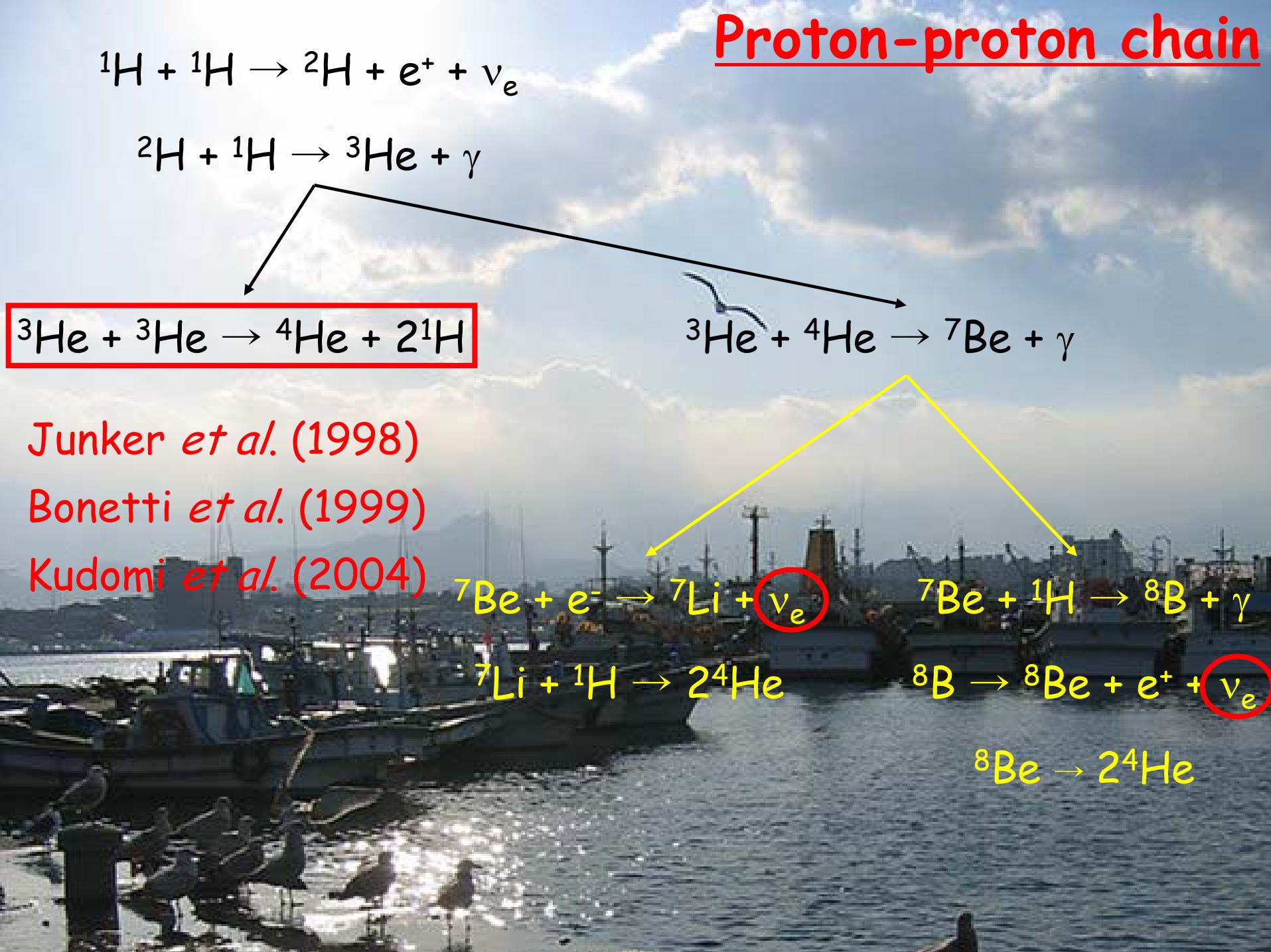
Proton-proton chain



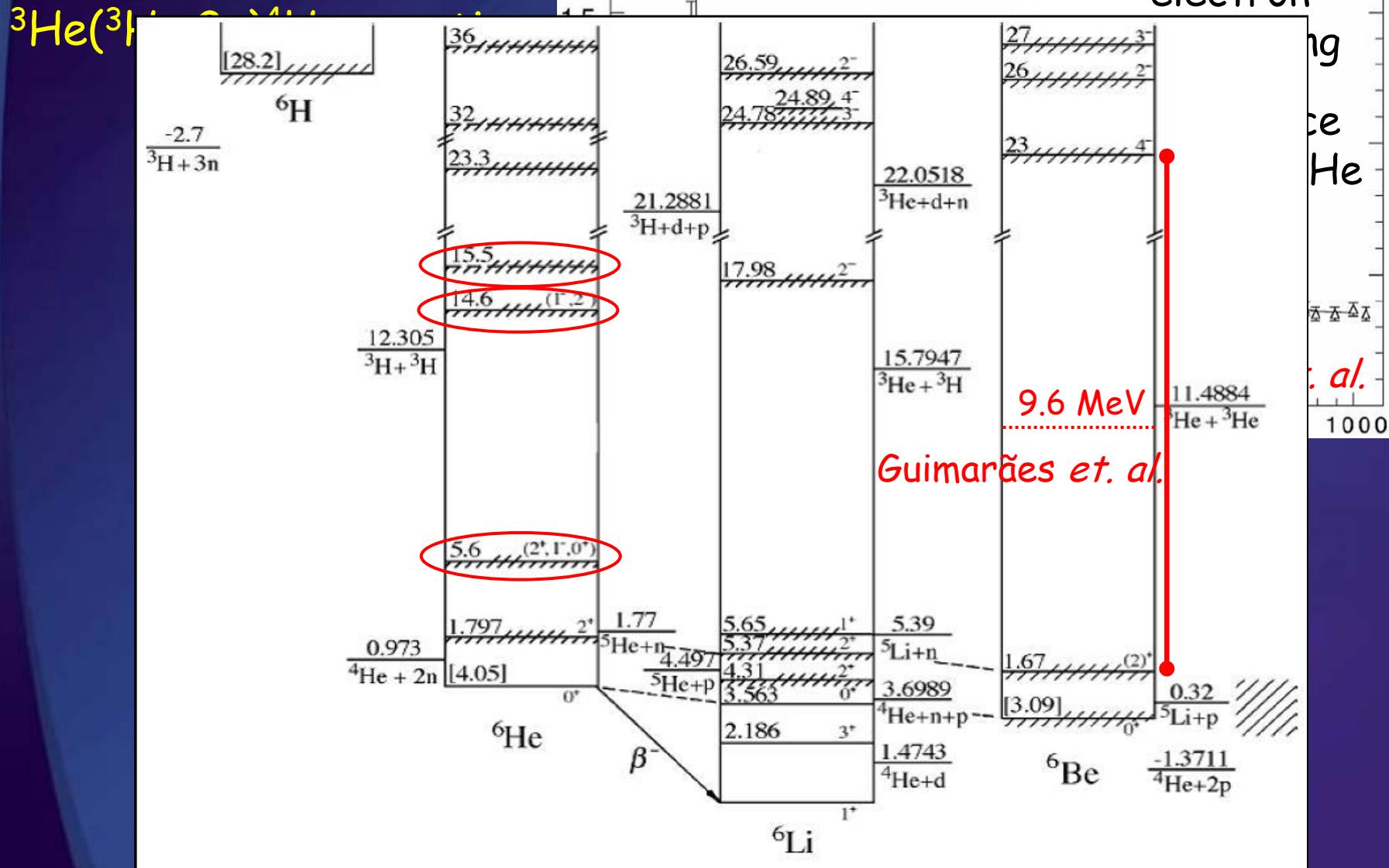
Junker *et al.* (1998)

Bonetti *et al.* (1999)

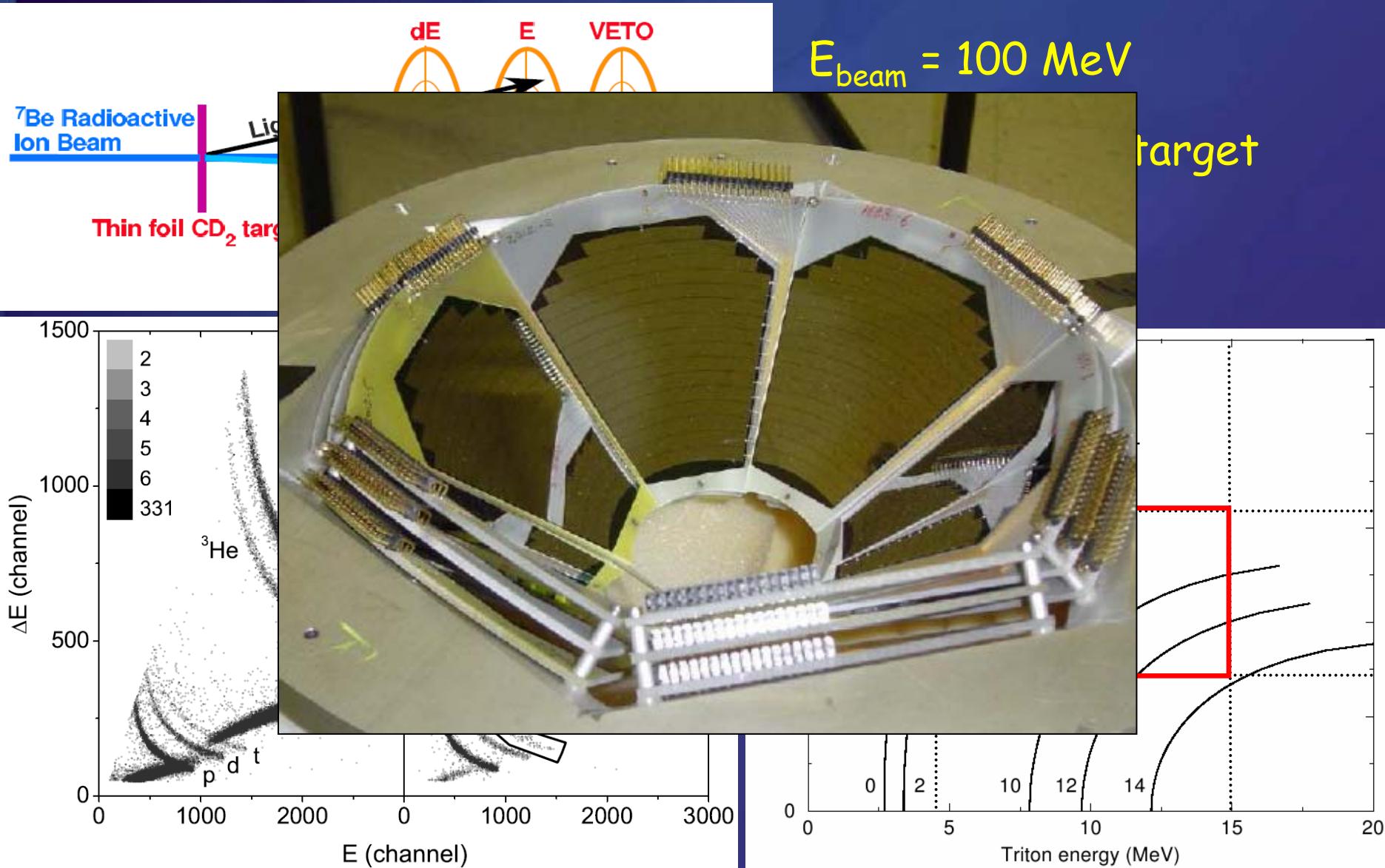
Kudomi *et al.* (2004)



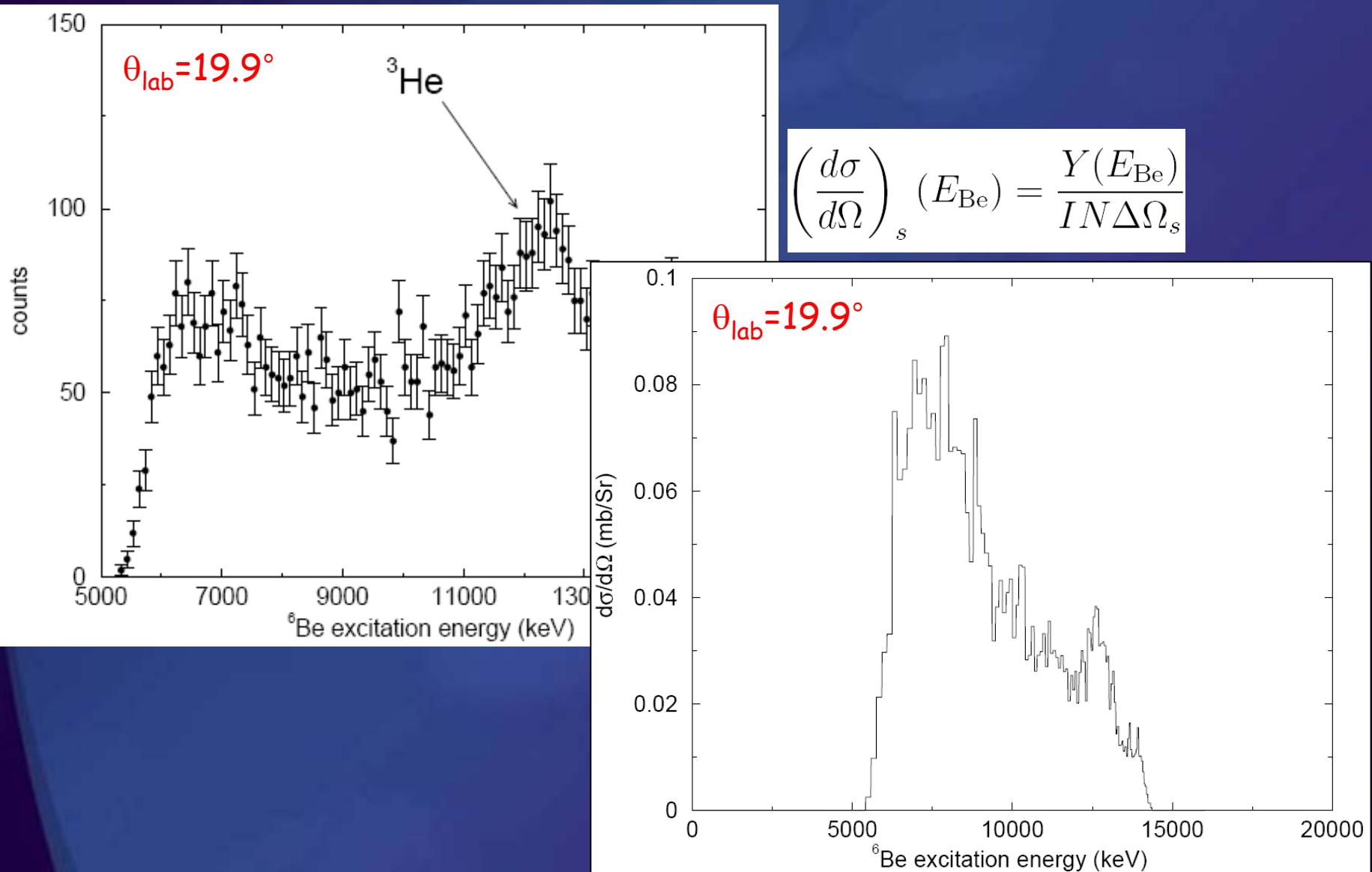
Motivation



$^{7}\text{Be}(\text{d}, \text{t})^{6}\text{Be}$



Counts & Cross Sections



Sequential Decay (3-body continuum)

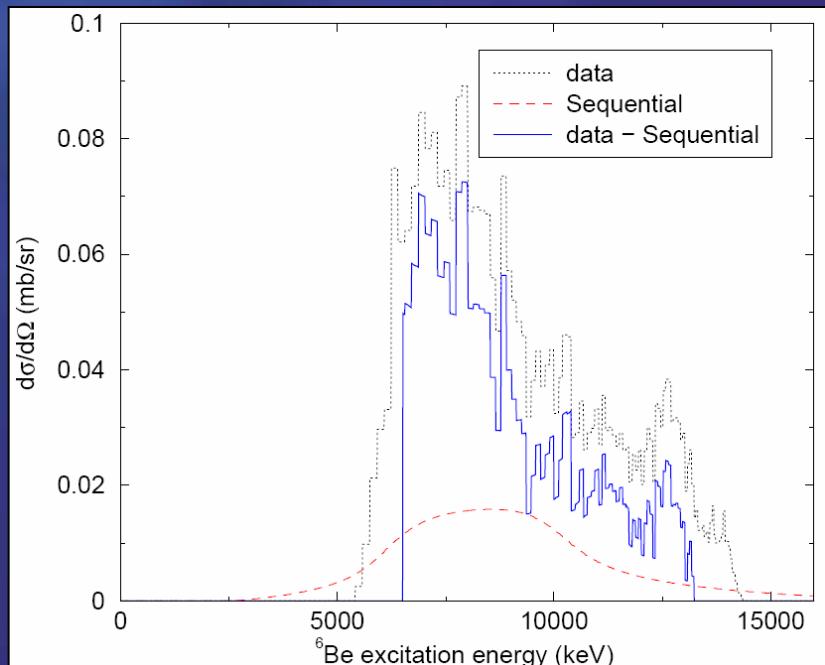
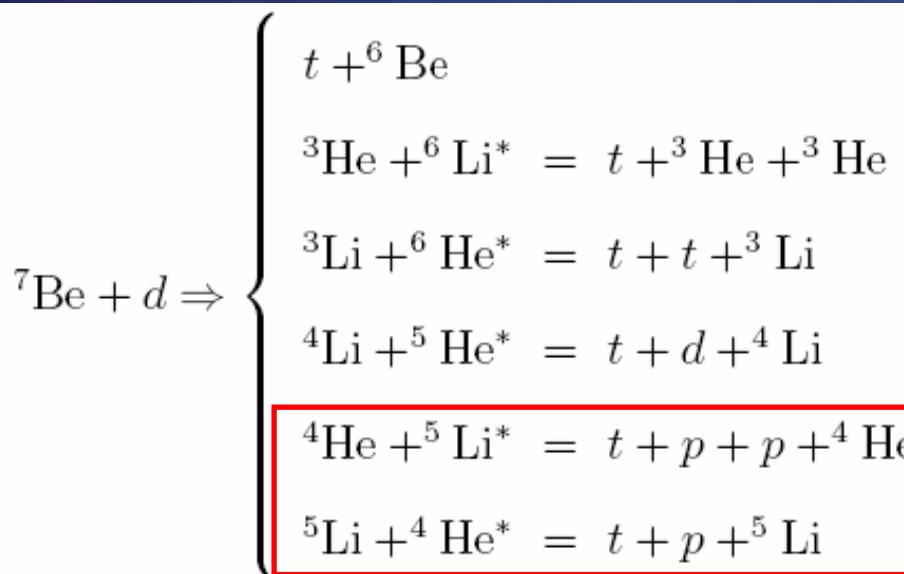


Two-step process

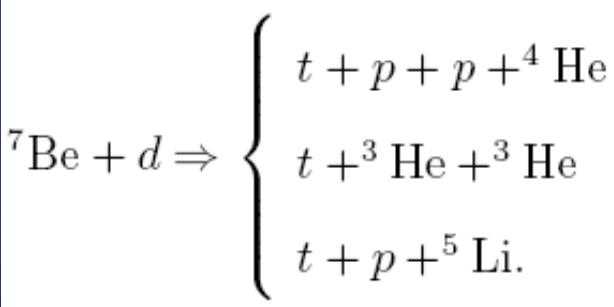
- pick-up by ${}^7\text{Be}$ forming an intermediate state
- decay of the intermediate state

Continuous distributions

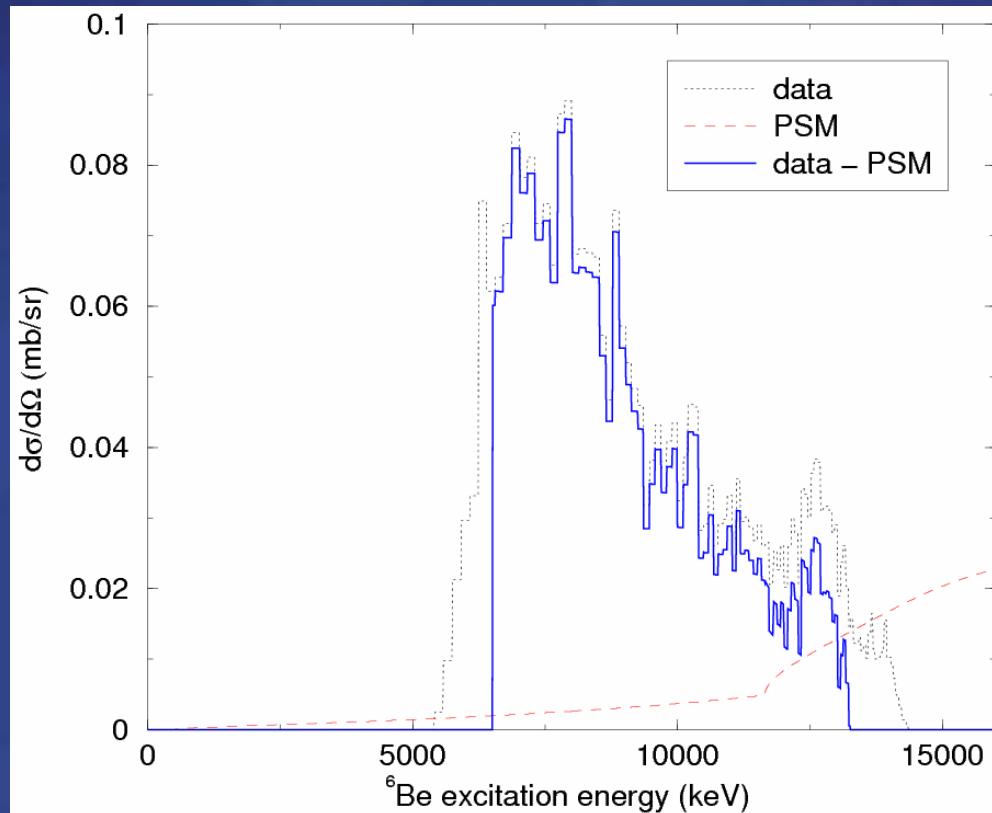
- incomplete reconstruction of kinematics
- triton energy depends on recoil particle's emission angle



Phase Space Model (PSM)



- collision with high energy
- energy will be released in small region
- distribution of energy



Upper Limits

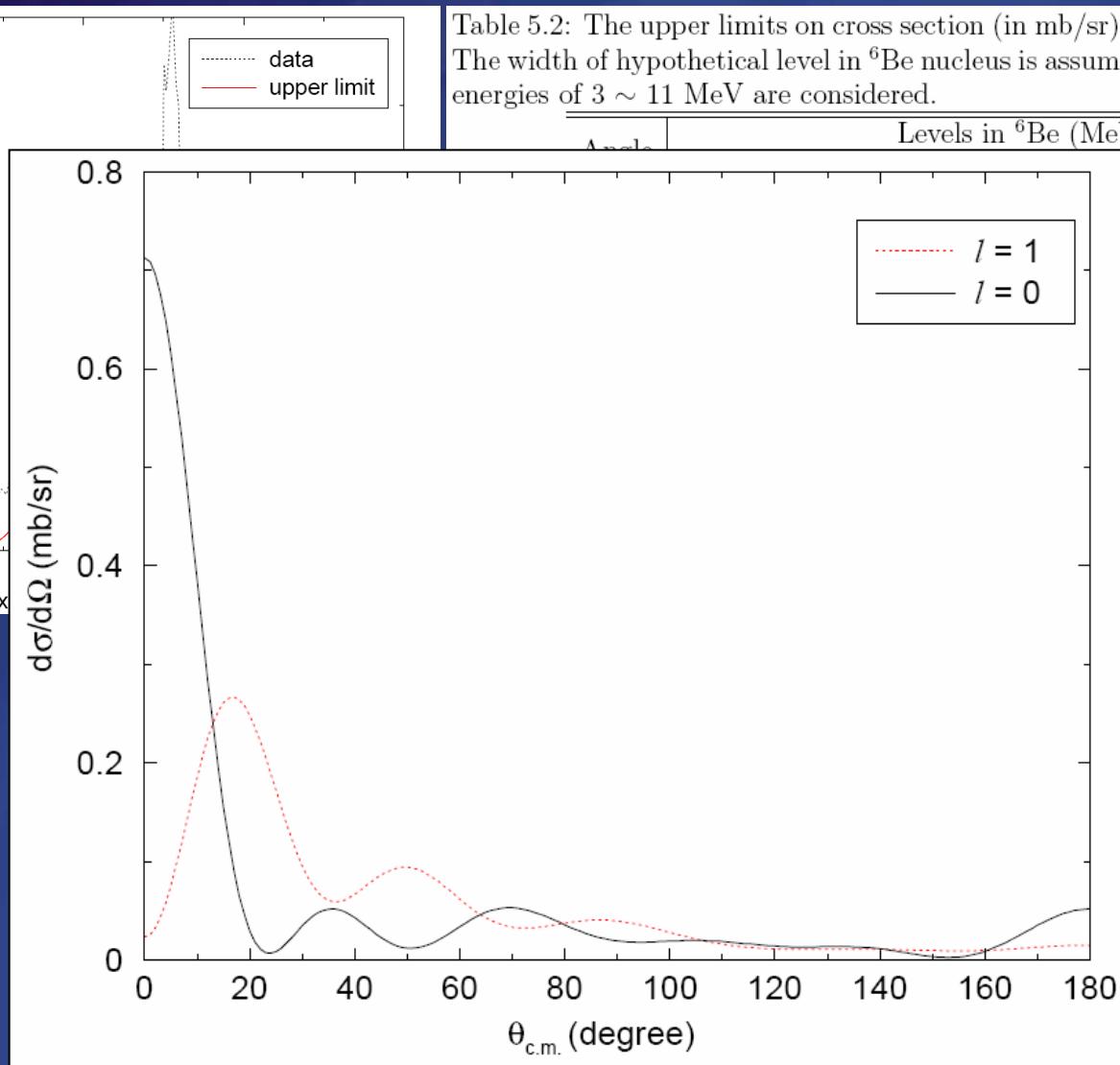


Table 5.2: The upper limits on cross section (in mb/sr) at each angle are summarized. The width of hypothetical level in ${}^6\text{Be}$ nucleus is assumed 0.5 MeV, and the excitation energies of 3 ~ 11 MeV are considered.

Thank You

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