

Short note

Observation of a proton halo in  ${}^8\text{B}$ 

Physics Letters B 452 (1999) 1–7

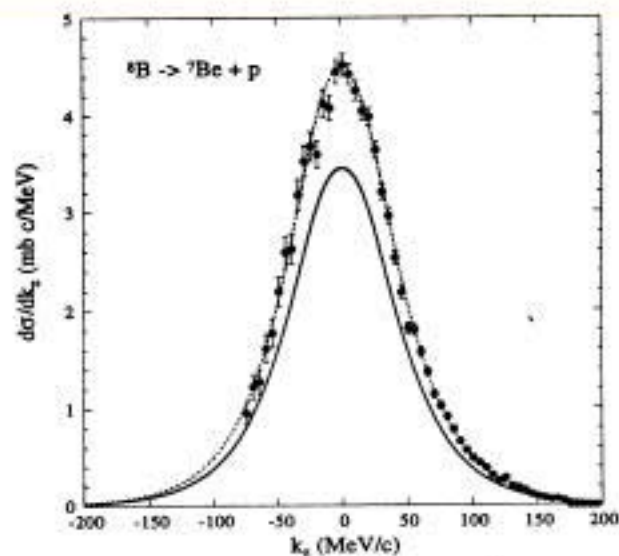
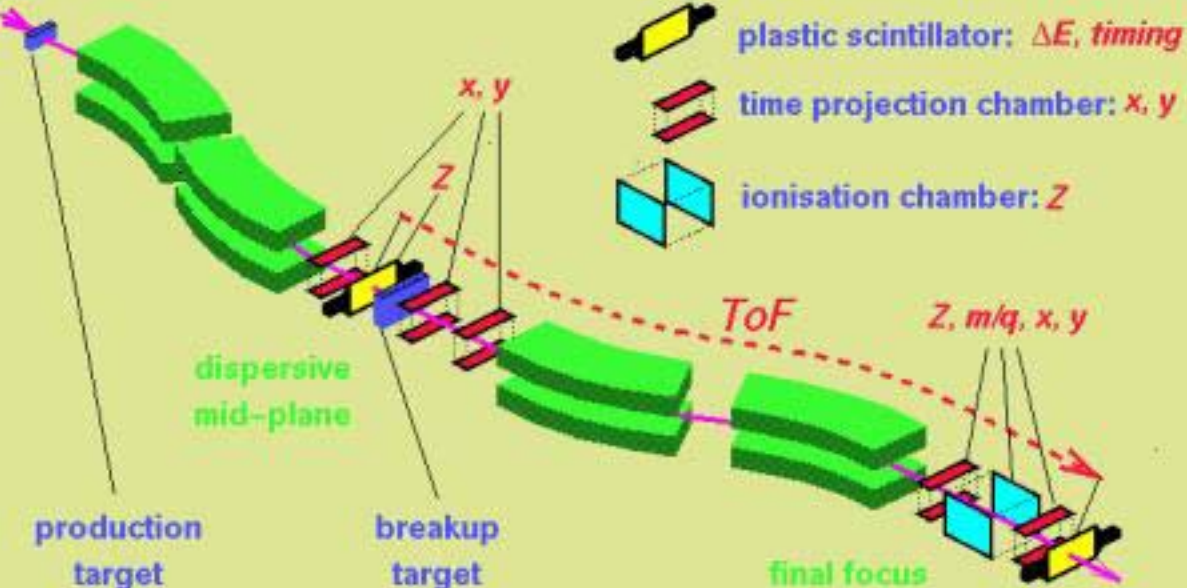
New results on the halo structure of  ${}^8\text{B}$ 

Fig. 3. Longitudinal momentum distribution of  ${}^7\text{Be}$  fragments from  ${}^8\text{B}$  breakup reactions. The experimental data are taken at 1440 MeV/u on a carbon target. The solid curve has been calculated for the  ${}^8\text{B}$  wave function according to Eq. (2) with parameters  $R_c = 2.40$  fm,  $R_p = 2.47$  fm, and  $R_p = 0.8$  fm. The dotted curve is the same but convoluted with the experimental resolution that broadens the measured momentum distribution.

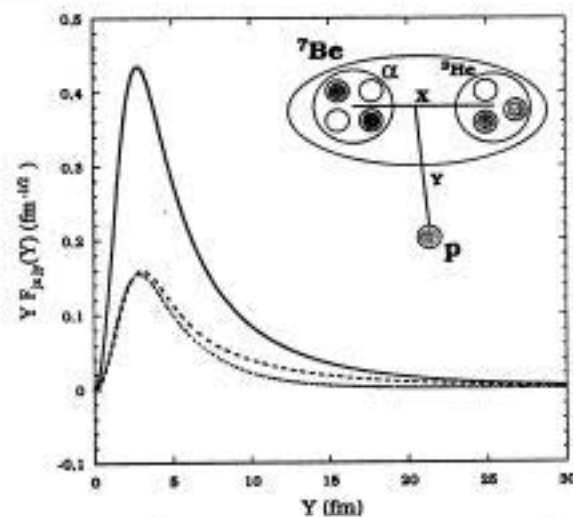


Fig. 2. Different  ${}^7\text{Be}$ - $p$  relative motion wave functions from [21] used in the calculations of the  ${}^7\text{Be}$  momentum distribution for the proton-stripping channel of  ${}^8\text{B}$  in a carbon target according to Eq. (1). The solid line corresponds to the ground state of  ${}^7\text{Be}$  ( $J^\pi = 3/2^-$ ) coupled to the valence  $p_{1/2}$  proton, the dashed line to the ground state and the valence  $p_{1/2}$  proton, and the dotted line to the first excited state of  ${}^7\text{Be}$  ( $J^\pi = 1/2^-$ ) coupled to the valence  $p_{1/2}$  proton. The inset shows the definition of the  $(X, Y)$  coordinates in Eq. (1).