

NDCX-II with Reduced Current

W M Sharp and the HIFS-VNL team

10 August 2011



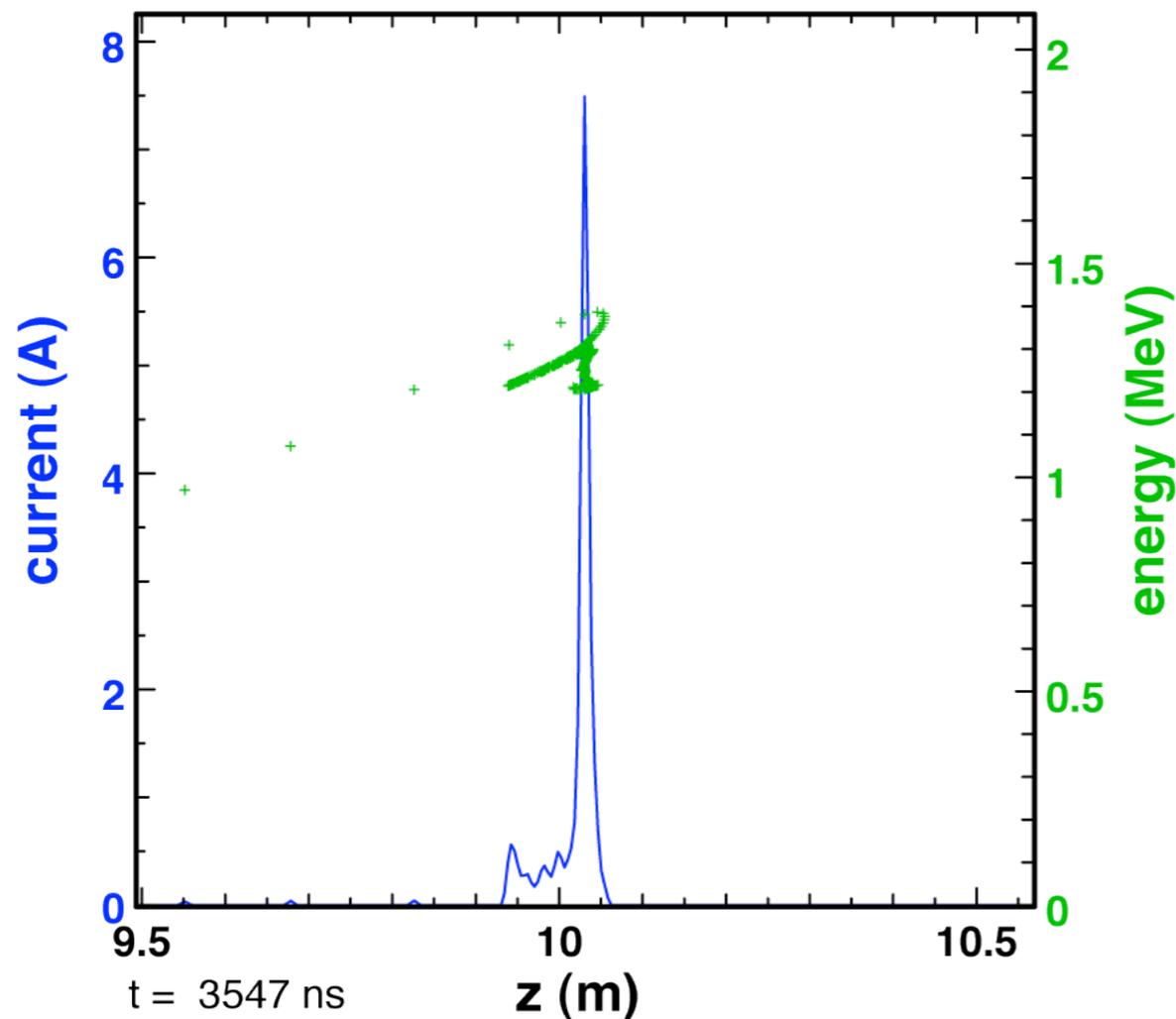
Heavy Ion Fusion Science
Virtual National Laboratory

ASP cases with a 0.5 mA/cm^2 require retuning

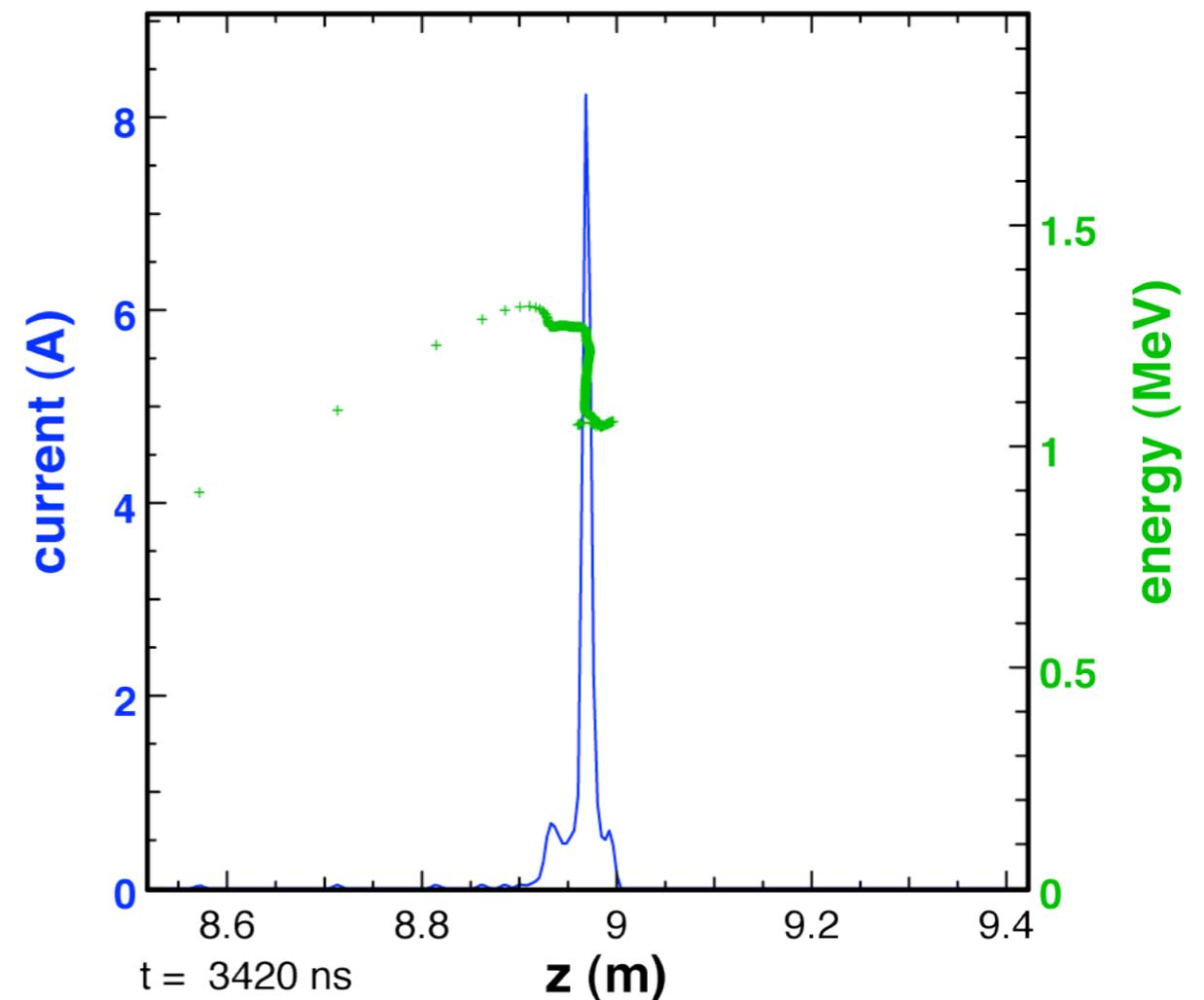
a usable low-current design is needed to prolong source lifetime

- lithium sources to date require a 1280°C temperature to produce 1 mA/cm^2
- the source lifetime is less than 50 hours at that temperature
- designs using a 0.5 mA/cm^2 source have been developed for alignment and testing phases

unaltered baseline fields



rescaled fields



ASP cases with a 0.25 mA/cm^2 still require work

0.25 mA/cm^2 designs require that initial energy be reduced to 90-100 kV

- the nominal 130 kV injector over focuses
- runs with the recently reoptimized source are incomplete
- encouraging results are found using rescaled Warp input from the 0.5 mA/cm^2 case

