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*Title:* Stripping of H- beams by residual gas in the linac at the Los Alamos Neutron Science Center  
(Slides)

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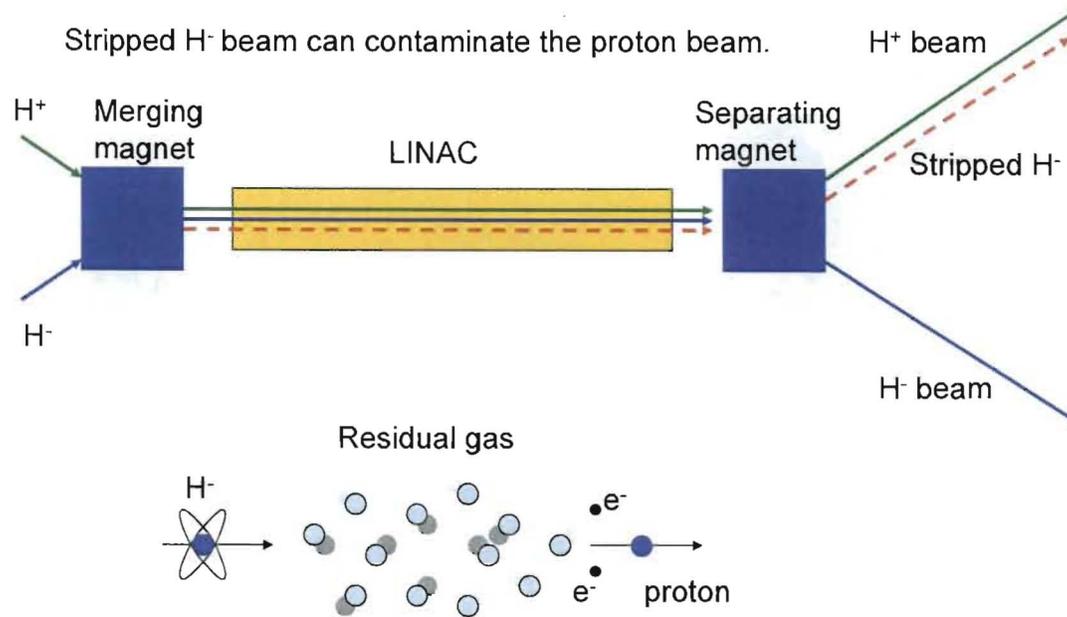
# Abstract

The linear accelerator at the Los Alamos Neutron Science Center (LANSCE) accelerates both protons and H<sup>-</sup> ions using Cockcroft-Walton-type injectors, a drift-tube linac and a coupled-cavity linac. The vacuum is maintained in the range of 10<sup>-6</sup> to 10<sup>-7</sup> Torr; the residual gas in the vacuum system results in some stripping of the electrons from the H<sup>-</sup> ions resulting in beam spill and the potential for unwanted proton beams delivered to experiments. We have measured the amount of fully-stripped H<sup>-</sup> beam (protons) that end up at approximately 800MeV in the beam switchyard at LANSCE using image plates as very sensitive detectors. We present here the motivation for the measurement, the measurement technique and results.

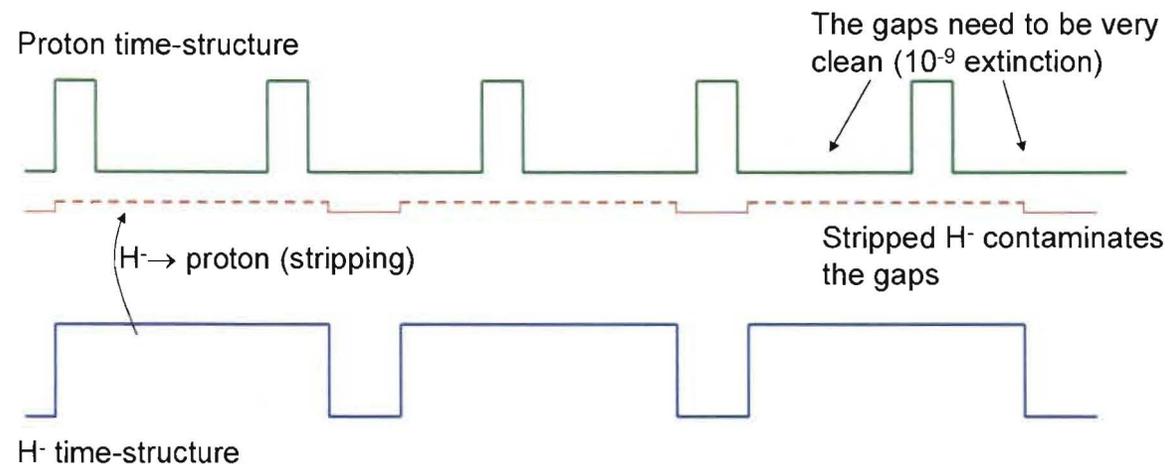
Stripping of  $H^-$  beams by  
residual gas in the linac at  
LANSCE  
THP069

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# LANSCCE accelerates protons and $H^-$ simultaneously



## Why stripping is a problem



We used image-plates as proton detectors

Result:  $9 \times 10^{-6}$  of  $H^-$  is stripped