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The modification and the development of the polarized ion source at iThemba LABS

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**Abstract content
 (Max 300 words)
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Since 1994 the atomic beam source at iThemba LABS delivers nuclear spin polarized protons for physics experiments. The source is composed from a dissoziation, a polarization, and an ionization unit. The DC ionization unit consists of a hot cathode and an electrode system with a potential distribution to optimize the ionization process. This potential distribution produces a high energy spread which results in a poor transmission through the cyclotron.

The beam performance is expected to improve drastically when the DC ionizer is replaced by an ionizer using Electron Cyclotron Resonance (ECR) ionization with a triode extraction system. iThemba LABS had the opportunity to obtain such an ionizer from the ion source group at PSI, Switzerland. The paper describes measurements of the magnetic field distribution of the ionizer, the integration of this unit in our source and first experimental beam results.

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No

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