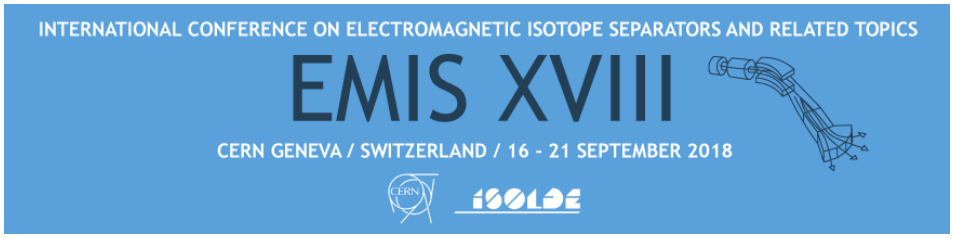

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A novel setup to develop Chemical Isobaric SEparation (CISE)

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Gas catchers are widely used to slow down nuclear reaction products and extract them for precision measurements. However, it is known that impurities in the inert stopping gas can chemically react with the ions and thus influence the extraction efficiency. So far, chemical reactions in the gas catcher have not been investigated in details. We want to understand the chemistry inside the gas-catcher and explore its potential as a new technique for separation of isobars. Therefore, we are currently building a new setup to develop Chemical Isobaric SEparation (CISE).
The CISE-Setup consists of a gas-catcher which can either be used in online experiments or in combination with a laser ablation source, for chemical studies with stable nuclides. It is coupled to an octupole ion-guide and a quadrupole mass filter combined with a linear Time-Of-Flight (TOF) spectrometer. Different chemical reactions for separation of isobars will be tested inside the gas-catcher filled by helium and reactive gases. An overview of the CISE-Setup, ion-optical simulations and technical design together with the status of the project will be presented in this contribution.

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