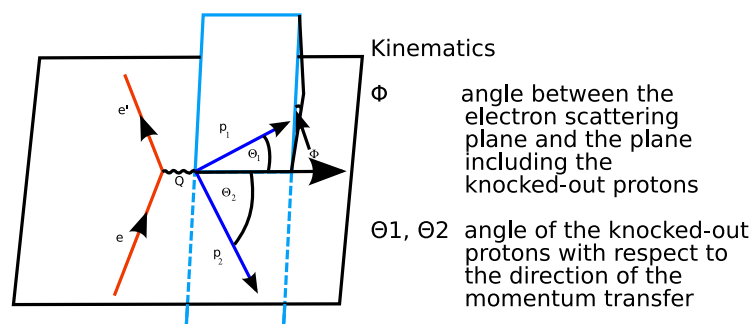


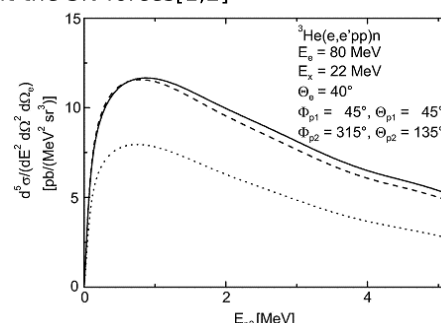
## 1 | Motivation

An experiment on the exclusive  $^3\text{He}(e, e'pp)$  reaction with low momentum transfer  $Q$  is planned at the S-Dalinnac superconducting electron-accelerator in Darmstadt



~No data for complete kinematics

~Probing the role of final-state interactions, meson-exchange current the 3N-forces[1,2]



calculated fivefold diff. cross section for the S-Dalinnac kinematics [1]

dotted = FSI    dashed = FSI + MEC    full = FSI + MEC + 3NF

## 2 | Requirements for the target

A concept for the target has been developed in [3].

Energy of the Protons ~10MeV

↳ thin foil gas cell  
to provide proton detection

scattering rate  $\dot{N} \sim p \sim \frac{1}{T}$

pressure limited → low-temperature-target

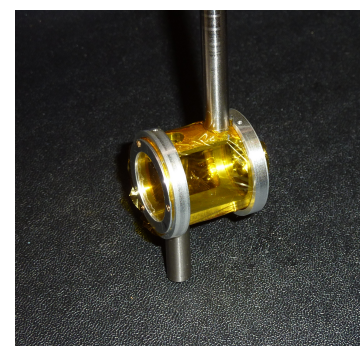
Energy deposit of the electrons in the gas

requires cooling

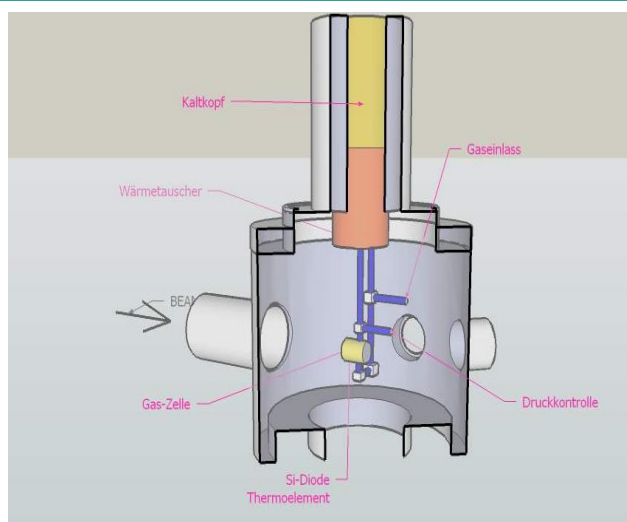
pressure limited → free convection

Picture of target prototype with the pipes connecting to the cooling cycle.

Target length and diameter is 3 cm



## 3 | Test-Chamber



## 5 | Outlook

Goals for a first test with electron beam (second half of 2010)

~measurements on the stability of the cooling system for different energies

~development and tests of the detector setup and electronics

~development of data acquisition software

~estimation of the required beam-time for a full experiment