

# The NEW DESY RF-Driven Multicusp H<sup>-</sup> Ion Source

J.Peters

*Deutsches Elektronen-Synchrotron DESY, Notkestraße 85,  
22607 Hamburg, Germany*

The HERA RF-Volume source is the only source that can deliver a H<sup>-</sup> current of 40 mA without Cs routinely and for periods of several years.

Step by step improvements have led to a completely new design. The plasma is now contained in an Al<sub>2</sub>O<sub>3</sub> ceramic chamber and has no contact to metal surfaces except for the collar. The sensitive antenna and also the pair of filter magnets are outside of the plasma.

The plasma chamber is mounted in a ceramic disk for high voltage insulation. The ignition of the plasma is done with an ignition source utilizing the higher pressure at the gas input.

Details about the set-up, performance, H<sup>+</sup> containment, sparking suppression and experience with a new 10cm diameter LEBT will be given.



Figure 1. THE NEW DESY RF H<sup>-</sup> Source

**Topic:** 2

**Corresponding Author:** J. Peters

E-mail Address

jens.peters@desy.de

Organization

DESY

City, State, Country

Hamburg, Hamburg, Germany

Telephone Number, Fax Number +494089982495