



Contribution ID: 123

Type: Poster

## The multistage differential pumping system in CIADS

*Tuesday 19 June 2018 18:00 (20 minutes)*

CIADS is short for China Initiative Accelerator Driven System, consists of intense-beam proton accelerator, spallation target and subcritical core. The multistage differential pumping system is a part of the large and complex vacuum system of CIADS which is between intense-beam proton accelerator and spallation target. The working pressure of spallation target is  $5.0 \times 10^{-4}$  Pa for He, however, the pressure of beam line which links the accelerator is  $1.0 \times 10^{-6}$  Pa. So ensuring the proton beam to bombard the spallation target and obtaining the pressure vary from  $5.0 \times 10^{-4}$  Pa to  $1.0 \times 10^{-6}$  Pa is an important research task.

The multistage differential pumping system with ten orders of magnitude pressure differential is obtained, of which working pressure spans all areas of vacuum, including viscous, transition and molecular flows. Based on the principle of differential vacuum system, this poster introduces the choices of materials, vacuum measurement elements and pumping system. In a few days, the availability of pumping system will be tested. The calculation and the design of ten-stage differential vacuum system has been finished already.

**Primary author:** Mr ZHANG, Peng

**Co-authors:** Mr HU, Chuanfei; Mr ZHANG, Junhui

**Presenter:** Mr ZHANG, Peng

**Session Classification:** Poster Session Tuesday

**Track Classification:** Vacuum in Accelerators