

# Open Charm measurements at CERN SPS energies with the new Vertex Detector of the NA61/SHINE experiment

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The heavy-ion programme of the NA61/SHINE experiment at CERN SPS has been expanded to allow precise measurements of exotic particles with short lifetime. The study of open charm meson production provides an efficient tool for new detailed investigations of the properties of hot and dense matter formed in nucleus-nucleus collisions. In particular, it opens new possibilities for studies of such phenomena as in-medium parton energy loss and quarkonium dissociation and possible regeneration, thus bringing new information to probe deconfinement.

The new Vertex Detector of the NA61/SHINE experiment for measurements of very rare processes of open charm production in nucleus-nucleus collisions at the SPS was designed to meet the challenges of track registration and of very precise spatial resolution in primary and secondary vertex reconstruction.

A small-acceptance version of the Vertex Detector SAVD (Small Acceptance Vertex Detector) was installed last year with a Pb target in the Pb beam of 150A GeV/c momentum, and a modest set of data were collected. The main goal of the ongoing data analysis was to observe a signal from the D0 meson. The status of this analysis will be presented, discussing a number of challenges related to the tracking in the inhomogeneous magnetic field, the matching of SAVD tracks to TPCs tracks, and the extraction of physics results.

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