

# Study of the charmed mesons pairs production in the electron-positron annihilation with initial state radiation at the energies near the open charm threshold

*Friday, 26 October 2018 10:20 (15)*

Until recently, parameters of vector charmonia lying above the open-charm threshold were determined from the inclusive cross section of the electron-positron annihilation to hadronic final state. However, the parameters of the resonances obtained this way are model-dependent and they suffer from large uncertainties. On the other hand, measurements of exclusive cross sections of the  $e^+e^-$  annihilation to charm hadrons should provide important missing information about strong interaction in this region so that the results of such measurements are of large interest both developments of experimental methods, and theory. In particular, the aforementioned measurements should shed light on the nature of the charmonia states with quantum numbers  $1^-$ , which are not fully understood yet. Determination of the masses and widths of these resonances in a model-independent way and extraction of their coupling constant to elastic open-charm channels will allow to obtain information on the wave functions of the vector charmonia and to verify the phenomenological models for heavy hadrons.

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**Session Classification** : Particle Physics

**Track Classification** : Particle physics