

Measurement of hadronic cross sections at CMD-3

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The CMD-3 experiment at the VEPP-2000 collider in Novosibirsk carries out a comprehensive study of the exclusive cross-sections of $e^+e^- \rightarrow$ hadrons in the center-of-mass energy range from the threshold to $2E < 2$ GeV. The CMD-3 results provide an important input for calculation of the hadronic contribution to the muon anomalous magnetic moment. Currently there are world-wide efforts to improve the accuracy of this calculation to match the expected precision of the Fermilab measurement, which started data taking in 2018. The best precision is still achieved by integrating the measured total cross-section of $e^+e^- \rightarrow$ hadrons. The calculation is strongly dominated by low-energy data, in particular, by data at $2E < 2$ GeV. Other interesting topics of the CMD-3 physics program include a study of hadron cross-sections at the nucleon-antinucleon threshold and a search for two-photon production of C-even resonances.

The CMD-3 is the general-purpose particle detector, equipped by a tracking system, two crystal (CsI and BGO) calorimeters, liquid Xe calorimeter, TOF and muon systems. The first round of data taking in the whole available energy range was done in 2011-2013. After a three-year break for collider and detector upgrades, data taking resumed in 2017 with a 2-3 times higher luminosity. Overall, about 120 $1/\text{pb}$ have been collected so far.

Here we present the survey of results of data analysis, including various modes of electron-positron annihilation with up to six pions or two kaons and pions in the final state.

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