



Contribution ID: 117

Type: **not specified**

Data-driven dispersive analysis of the $\gamma\gamma \rightarrow D\bar{D}$ data

Thursday, 26 May 2022 09:35 (20 minutes)

We present a data-driven analysis of the $\gamma\gamma \rightarrow D^+D^-$ and $\gamma\gamma \rightarrow D^0\bar{D}^0$ reactions from threshold up to 4.0 GeV in the DD^- invariant mass. For the S-wave contribution, we adopt a partial-wave dispersive representation, which is solved using the N/D ansatz. The left-hand cuts are accounted for using the model-independent conformal expansion. The D-wave $\chi_{c2}(3930)$ state is described as a Breit-Wigner resonance. The resulting fits are consistent with the data on the invariant mass distribution of the $e^+e^- \rightarrow J/\psi DD^-$ process. Performing an analytic continuation to the complex s -plane, we find no evidence of a pole corresponding to the broad resonance X(3860) reported by the Belle Collaboration. Instead, we find a clear bound state below the DD^- threshold at $s_{B^-} = \sqrt{3695(4)}$ MeV, confirming the previous phenomenological and lattice predictions. The existence of such state X(3695) may be tested in direct production at PANDA@FAIR.

Presenter: DEINEKA, Oleksandra (Johannes Gutenberg University of Mainz)