

## Effective field theory approach to exotic Z-states with heavy quarks

### Content

We suggest an effective field theory based coupled-channel approach to exotic charged Z-states and demonstrate its potential at a combined analysis of the existing experimental data on the open- and hidden-flavour decays of the Upsilon(10860) resonance. As an important ingredient of the method a dispersive approach to dipion transitions to lower lying Upsilon-resonances is developed with all imaginary parts of the amplitude being under a theoretical control. The method suggested is able to provide a universal description of the entire bulk of the data on the production and decays of exotic Z-resonances in the intermediate state of the reaction under study that allows one to extract the poles of the amplitude in the energy complex plane, study the nature of the exotic candidates, evaluate couplings between different coupled channels, predict spin partner states, and so on. Application of the method to exotic Y- and Z-states in the spectrum of charmonium is briefly outlined.

### Summary

The talk is based on a series of recent publications (Phys.Rev. D98 (2018) no.7, 074023, Phys.Rev. D99 (2019) no.9, 094013, Phys.Rev. D103 (2021) no.3, 034016) prepared in collaboration with V. Baru, E. Epelbaum, A.A. Filin, C. Hanhart, R.V. Mizuk, S. Ropertz, Q. Wang J.-L. Wynen and is done on behalf of these authors.

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