

# Investigation of spectral structure of $^{11}\text{Be}$ in breakup reactions within quantum-quasiclassical approach

Monday 1 July 2024 15:50 (15 minutes)

Abstract. We investigate the breakup of the  $^{11}\text{Be}$  halo nuclei on a light ( $^{12}\text{C}$ ) target within quantum-quasiclassical approach in a wide range of beam energy (5–67 MeV/nucleon) including the low-lying resonances of  $^{11}\text{Be}$ . The obtained results are in good agreement with existing experimental data at 67 MeV/nucleon. The developed computational scheme can potentially be used for interpretation of low-energy breakup experiments on different targets in studying spectral properties of nuclei. In particular, the region around 20–10 MeV/nucleon is of great interest, since this is the energy range of HIE-ISOLD at CERN and the future ReA12 at MSU, it has hardly been investigated theoretically so far.

## Section

Nuclear structure: theory and experiment

**Primary author:** VALIOLDA, Dinara (BLTP/KAZNU)

**Co-authors:** JANSEITOV, Daniyar (BLTP/INP); MELEZHIK, Vladimir (BLTP JINR Dubna)

**Presenter:** VALIOLDA, Dinara (BLTP/KAZNU)

**Session Classification:** Experimental and theoretical studies of nuclear reactions