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Type: **Talk**

Molecular states with charm: insights from vacuum and finite-temperature analyses

Thursday, June 6, 2024 6:00 PM (30 minutes)

This talk explores recent results in the study of molecular states with both open and hidden charm. Employing effective-field theories that incorporate heavy-flavor degrees of freedom and implement heavy-quark spin symmetry, significant progress has been made in generating bound and resonant states through unitarization techniques. Special attention will be given to the heavy-light sector, elucidating the double pole structure of the $D^{0*}(2300)$ state as well as the $D_s^{0*}(2317)$. In the hidden charm sector, the discussion will delve into exotics, like the $X(3872)$, highlighting differences from the compact state interpretation. Furthermore, the feasibility of extracting relevant information from femtoscopy measurements will be discussed. A final part will cover the properties of molecules at a finite temperature in the context of heavy-ion collision phenomenology and how the molecular states can melt in such a medium.

Author: TORRES-RINCON, Juan (Universitat de Barcelona)

Presenter: TORRES-RINCON, Juan (Universitat de Barcelona)

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