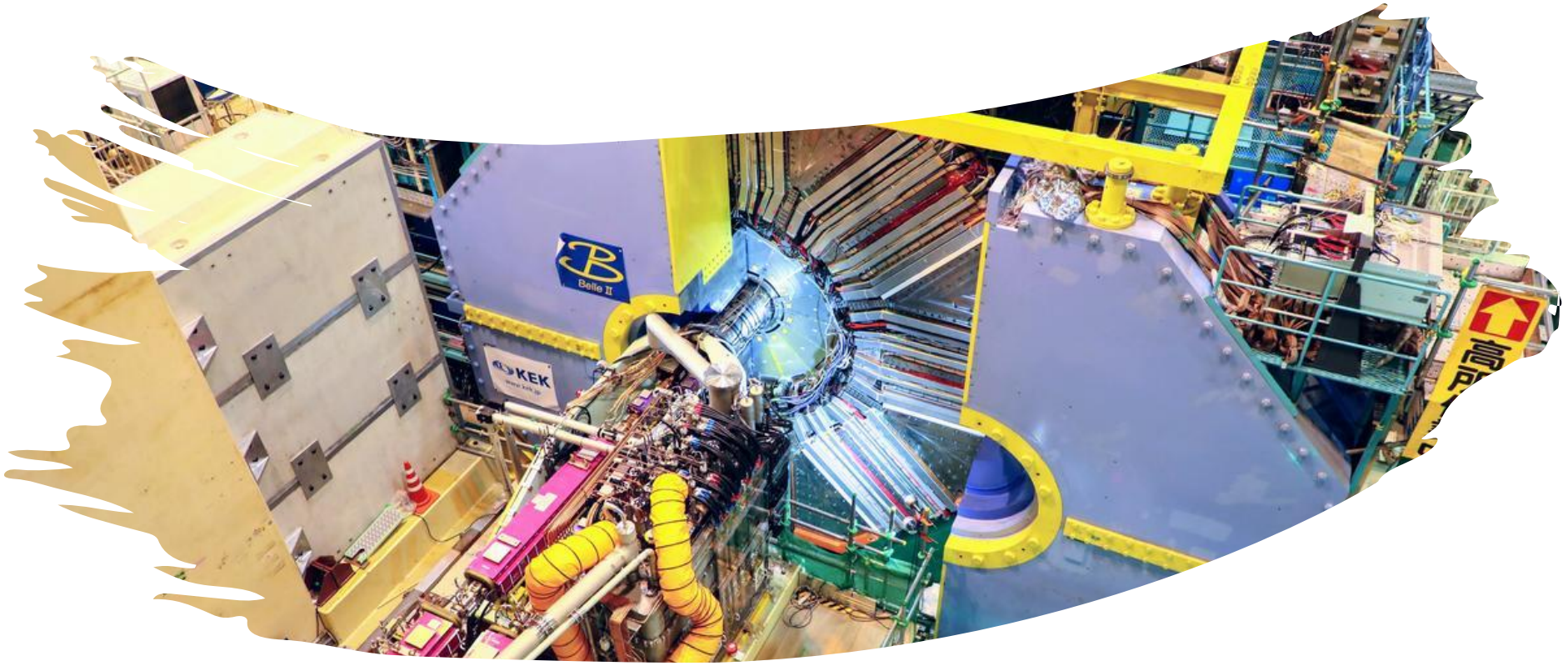

Emmy Noether Group: Unravelling the D^{**}

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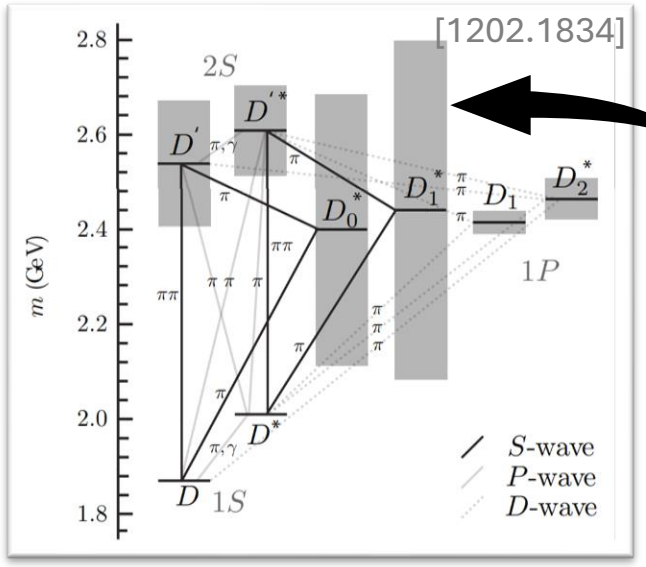
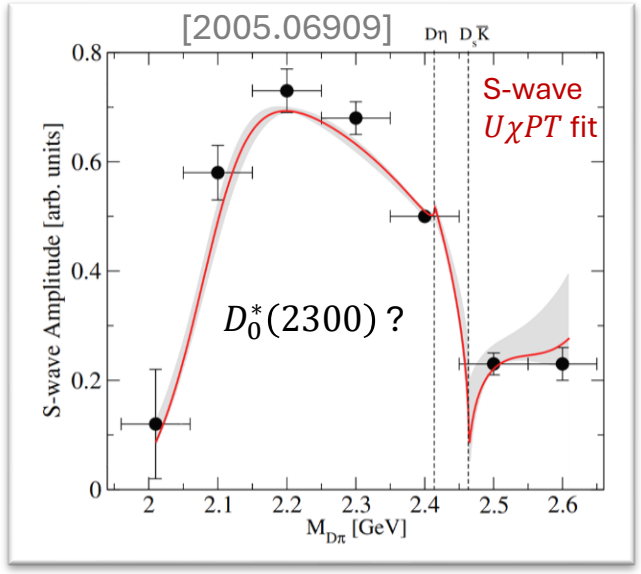
Unravelling the D^{**}

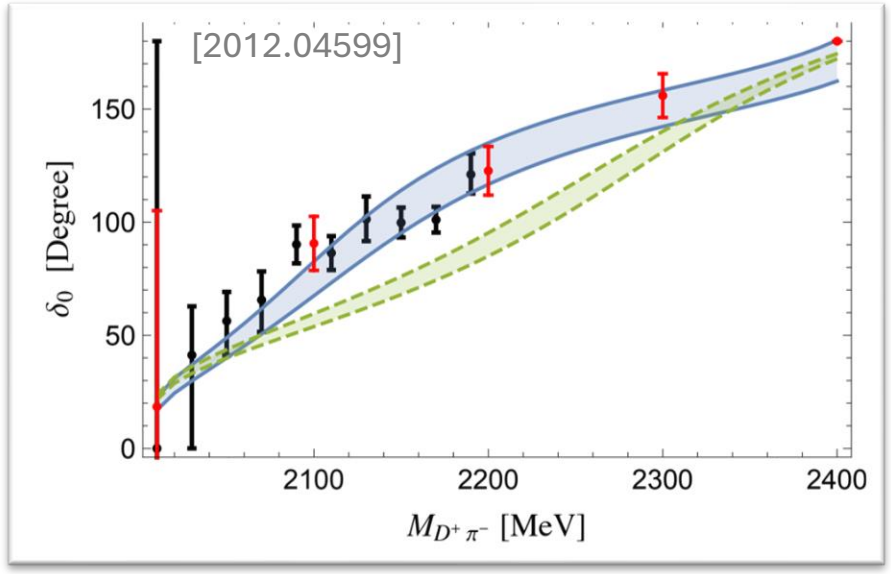


What is the nature of these broad states?

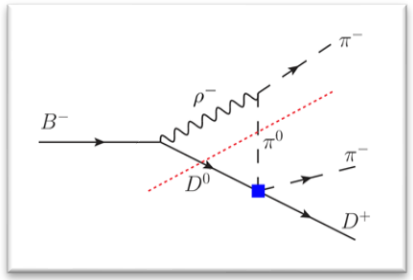


Is this bump structure a Breit-Wigner resonance or something more exotic, e.g., a two-pole structure?

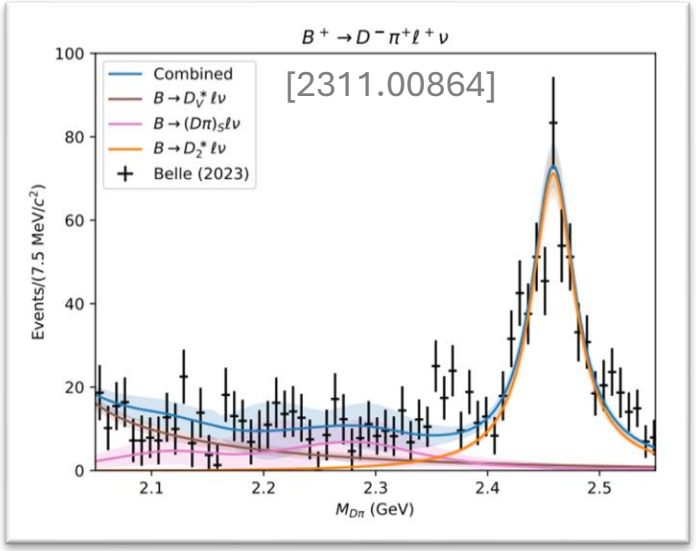
Phase-motion of **Breit-Wigner** vs two-pole structure from $U\chi PT$



Absence of $B \to D\rho \to D\pi\pi$ reduces the model dependence in extraction of the phase-motion

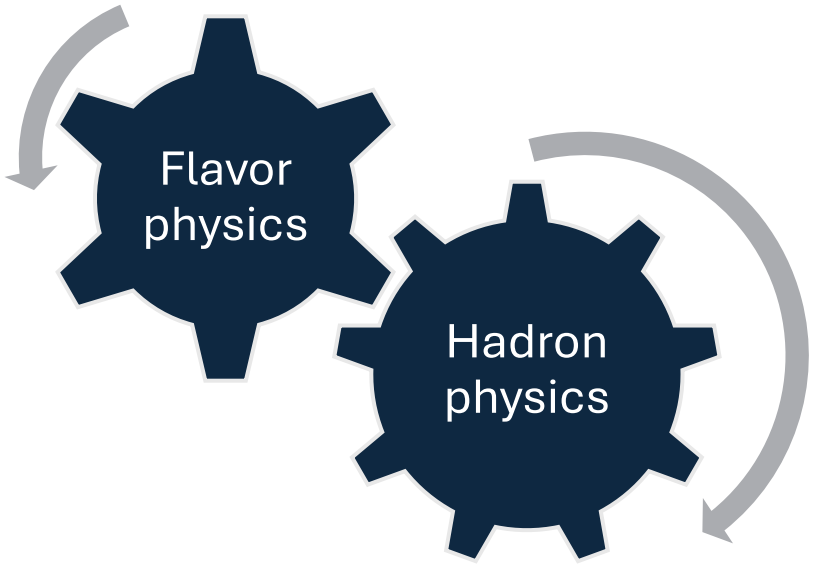


Understanding the (S-wave) $D^{(*)}\pi$ spectrum is crucial for semileptonic analyses (D^{**} and gap modelling)



Unravelling the D^{**}

Semileptonic $B \to D^{(*)}\pi\ell\nu$



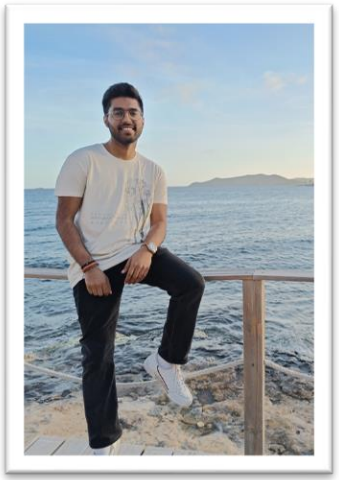
Dalitz Analyses $B \to D^{(*)}\pi\pi$

To unravel the nature of the D^{**} we combine knowledge from hadron physics and flavor physics…

… and use it to tackle the open questions of $|V_{cb}|$ and $R(D^{(*)})$, where $B \to D^{**}\ell\nu$ decays remain an open problem.

Unravelling the D^{**} - Together

Dalitz Analyses $B \to D^{(*)}\pi\pi$



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Semileptonic $B \to D^{(*)}\pi\ell\nu$

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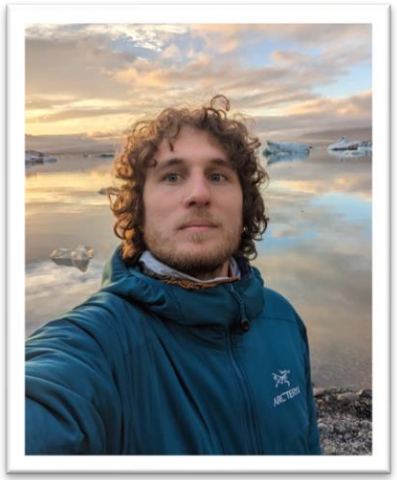

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