

Hadronic three-body Christmas

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December 20th, 2021
ORIGINS / MIAPP, Garching, Germany



Physics program

Freed-isonbar data, $X(3872)$, and T_{cc}^+

$$A^{\text{initial} \rightarrow 3} = \frac{N(\text{reaction specific})}{D(\text{common for } J^P)}$$

- Re-summed effect
 - Effect of subchannel two-body resonances (complex branch points)
 - One-particle exchange effect the binding
- Reaction-specific physics
 - Final state interaction (resonance-lineshape modification)
 - Triangle singularities and resonance-like effects
- Genuine $3 \rightarrow 3$ scattering on Lattice
 - Quantization condition (finite volume)
 - Relation to the physical scattering amplitude (infinite volume)

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Several cases where the three-body effects are essential:

- light-meson sector: unprecedentedly precise data
- heavy-meson sector: newly-discovered corner-cases
- lattice: first $3 \rightarrow 3$ calculations

Organizational points

- **COVID in Munich:** vaccinated/recovered certificate, FFP2 masks, and digital form + quarantine for traveling from high-risk (virus variant) areas.
- **U6 commitment:** daily ticket (tageskarte) for zones M-2 (price: 10.1EUR for 1 person to 17.9EUR for a group < 6) is the optimal solution for two commits.
- **MIAPP fenced area:** a valid ID, vaccination certificate are needed for the guard.
- **2G+ rule** includes daily tests: a free station in the campus (preferred), or a self test.
- **Reimbursement:** originals of the bills, tickets, and a form need to be handed to MIAPP managers.