



Contribution ID: 20

Type: **1st and 2nd weeks (Hadron structure and interactions)**

Modern theory of nuclear forces

Monday, October 21, 2024 9:00 AM (1h 30m)

The strong interaction between nucleons has been at the heart of nuclear physics since the very beginning of this field. Remarkable progress has been achieved in recent decades towards quantitative understanding of nuclear forces and the corresponding current operators in the framework of chiral effective field theory. Combined with modern ab-initio few-body methods and continuously increasing available computational resources, this approach opens the way for a systematically improvable and model independent description of light nuclei and low-energy dynamics in harmony with the symmetries of quantum chromodynamics. I will discuss different versions of effective field theory for nuclear systems focusing especially on the conceptual foundations, review various techniques to derive nuclear interactions and outline the state-of-the-art and remaining challenges in this field.

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Session Classification: Lecture