Effective Field theory and Strong interaction with accurate error estimation

Welcome and basic information

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Espace de Structure Nucléaire Théorique (CEA/DSM-DAM)
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Motivation

→ Several researchers started to work in the direction of developing renormalizable EFTs

→ Applications of the leading and higher orders

Finite nuclei

Nuclear reactions

Nuclear matter

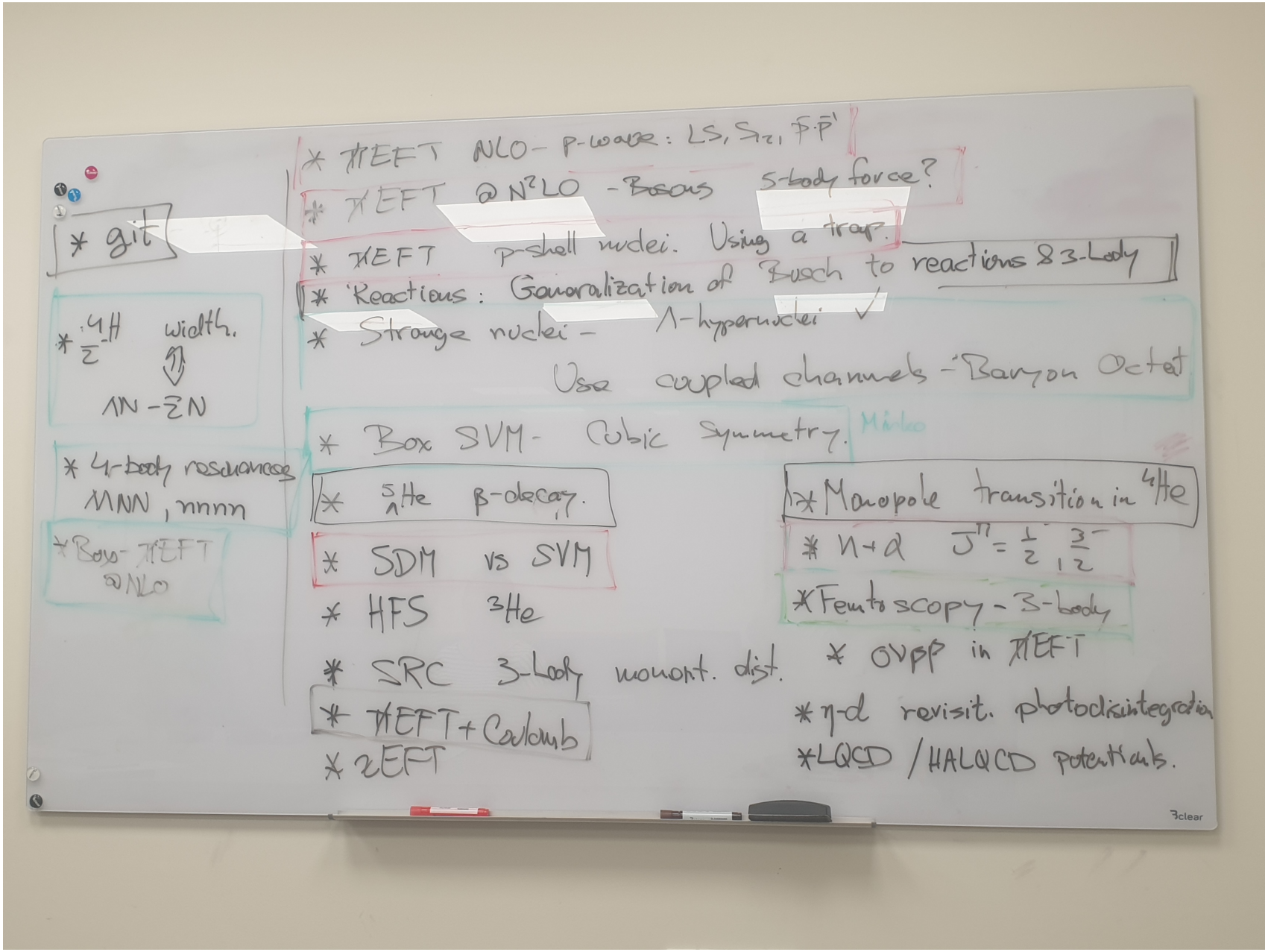
Hypernuclei

Lattice-nuclear-physics

I would like to thank to:

- ESNT for the support that makes the realization of this meeting possible
- Valérie Lapoux
- Lorenzo Contessi

Brainstorming - there is no time like the present !



Form of the meeting and primary objectives

→ Each day one or two informal talks to provide updates on participant's work and interests

→ Talks will serve to keep all of us informed about each other's work and to initiate discussions

Primary objectives are as follows:

- Establishing the current state of the art in the field.
- Defining the necessary criteria for renormalizable effective field theories to be considered successful and practical in applications.
- Initiating discussions on addressing specific challenges related to the construction and application of these interactions, as well as gathering theoretical and numerical techniques required for realistic calculations.

Talks I

Monday 8th

[14h] Why EFT should not be Escoffier's veal in your nuclear cooking

Ubirajara van Kolck (ECT*)

[15h] Towards the description of larger systems with renormalizable EFTs

Lorenzo Contessi (IJCLab)

Tuesday 9th

[14h15] Five-body calculation of $n - {}^4\mathrm{He}$ scattering at next-to-leading order $\not\pi$EFT

Mirko Bagnarol (The Racah Institute of Physics)

Wednesday 10th

[11h] Accelerating Variational Monte Carlo calculations with decision geometry

Mehdi Drissi (Department of Physics, TRIUMF)

[14h15] Quantum Monte Carlo and EFTs

Andrea di Donna (Universitá degli studi di Trento)

Talks II

Thursday 11th

[14h15] Perturbative application of next-to-leading order $\not\pi$EFT for $A \leq 3$ nuclei in a finite volume

Tafat Weiss-Attia (The Racah Institute of Physics)

Friday 12th

[14h15] The 4-body coupled-channel problem with zero-range interactions

Johannes Kirscher (Department of Physics, SRM University)

For a detailed list of talks with abstracts see
https://esnt.cea.fr/Phocea/Page/index.php?id=118

Rooms

Monday 8th
Tuesday 9th
Wednesday 10th
Friday 12th
→ room 135 [9-20h]

Thursday 11th
→ room 101 [9-13h]; room 135 [13-20h];

We may use the office room 115A to have a private place, Zoom/Skype calls, etc.

Social dinner - today at 8pm

All participants are invited to a social dinner.

Monday at 8pm in the restaurant "Ma Cachette" in Paris
8 Rue des Chartreux, 75006 Paris

How to get there:

Bus 9 : 18:24 Orme de Merisiers → 18:35 Gare du Guichet

RER B : 18:41 La Guichet → 19:19 Cité

Slow 40-minute walk to the restaurant.

Bus 9 : 18:59 Orme de Merisiers → 19:10 Racine

RER B : 19:16 La Guichet → 19:43 Port Royal

Slow 10-minute walk to the restaurant.

Reimbursement

Lunches :

- All invited participants will have the launches at CEA offered.
- I suggest to meet to have a lunch together at 12h15

Fully supported participants :

- please collect your meal receipts !