

Snowmass CEPC: EF09-10

Hao Zhang

Jun 22, 2020

Theoretical Physics Division, Institute of High Energy Physics,
Chinese Academy of Sciences

EF09-BSM: More General Explorations

- Key words: “beyond”, “general”.
- Where is new physics?



THE STANDARD MODEL



?

EFT

EFT

EFT

EFT

EFT

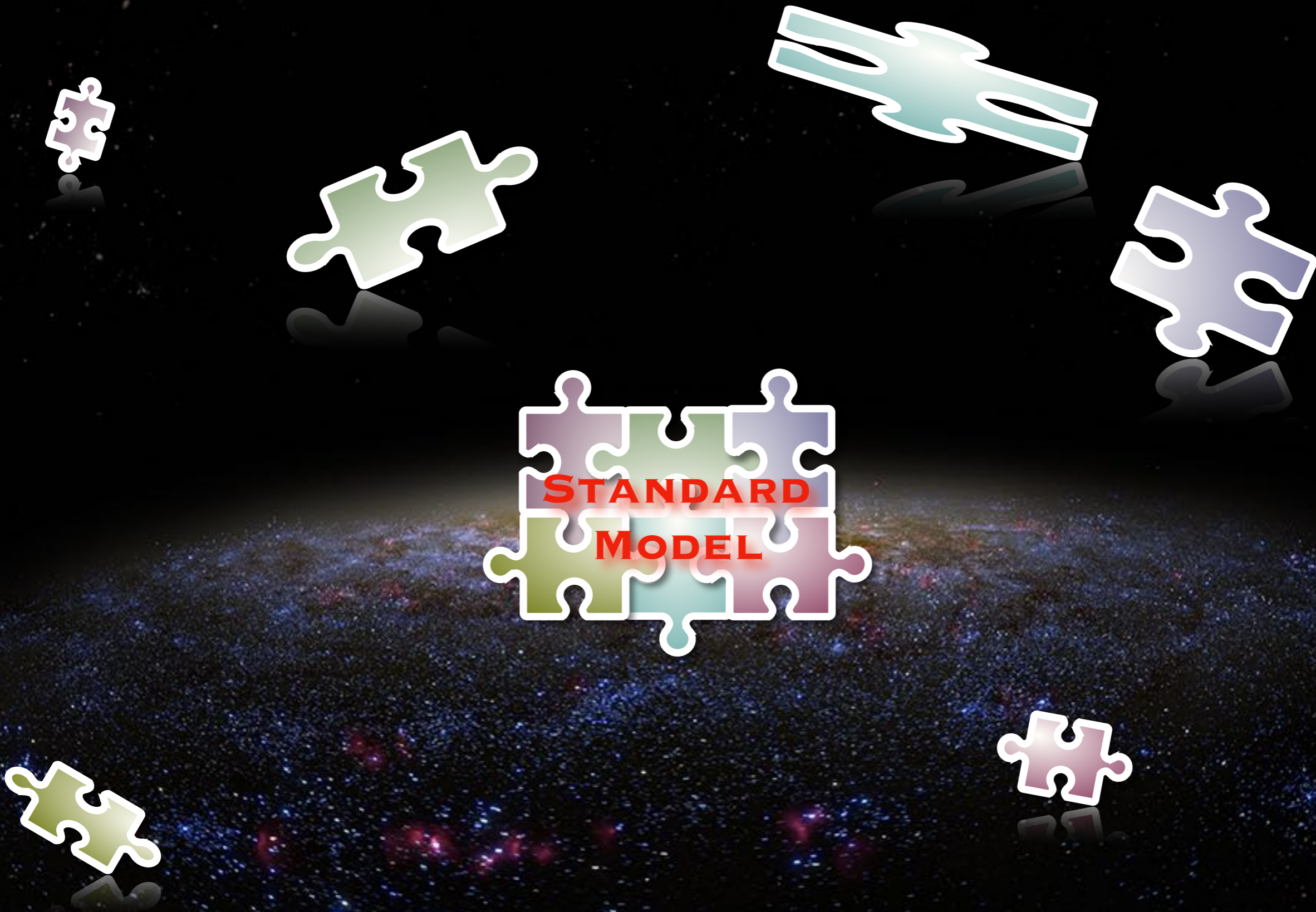
EFT

The Standard Model

EF09-BSM: More General Explorations

- Key words: “beyond”, “general”.
- Where is new physics?
- Top-down New Physics:
 - EFT
 - Does not mean dim6 only!





**STANDARD
MODEL**

EF09-BSM: More General Explorations

- Key words: “beyond”, “general”.
- Where is new physics?
- Top-down New Physics.
- Adjacent New Physics:
 - Exotic light degrees of freedom,
 - Long-lived particle.



THE STANDARD MODEL

EF09-BSM: More General Explorations

- Key words: “beyond”, “general”.
- Where is new physics?
- Top-down New Physics.
- Adjacent New Physics.
- Accident?



EF09-BSM: More General Explorations

- Key words: “beyond”, “general”.
- Where is new physics?
- Top-down New Physics.
- Adjacent New Physics.
- Accident?
- Face to important principles and mechanisms, but (probably) not specific models.



THE STANDARD MODEL

EF10-BSM: Dark Matter at Colliders

- By definition, it is part of BSM.
- WIMP dark matter.



EF10-BSM: Dark Matter at Colliders

- By definition, it is part of BSM.
- WIMP dark matter.
- Non-WIMP dark matter:
 - Axion, ALP, PBH, ADM, ...

EF10-BSM: Dark Matter at Colliders

- By definition, it is part of BSM.
- WIMP dark matter.
- Non-WIMP dark matter:
 - Axion, ALP, PBH, ADM, ...
 - “应检尽检”!

愿大家健康

Thank You!

