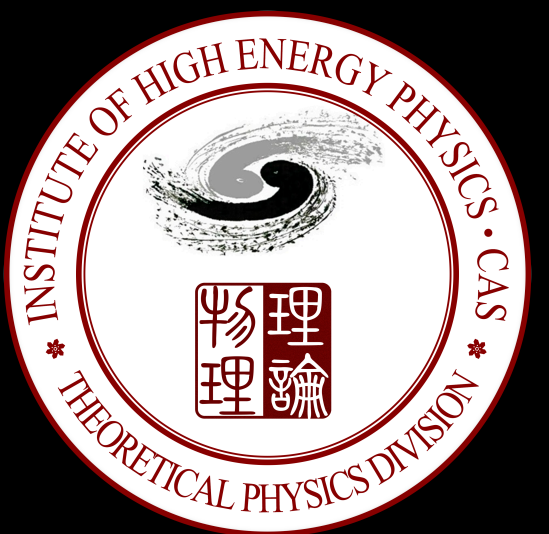


Dark Matter Search @ CEPC

Zhao Li
IHEP-CAS

Jun 22 2020



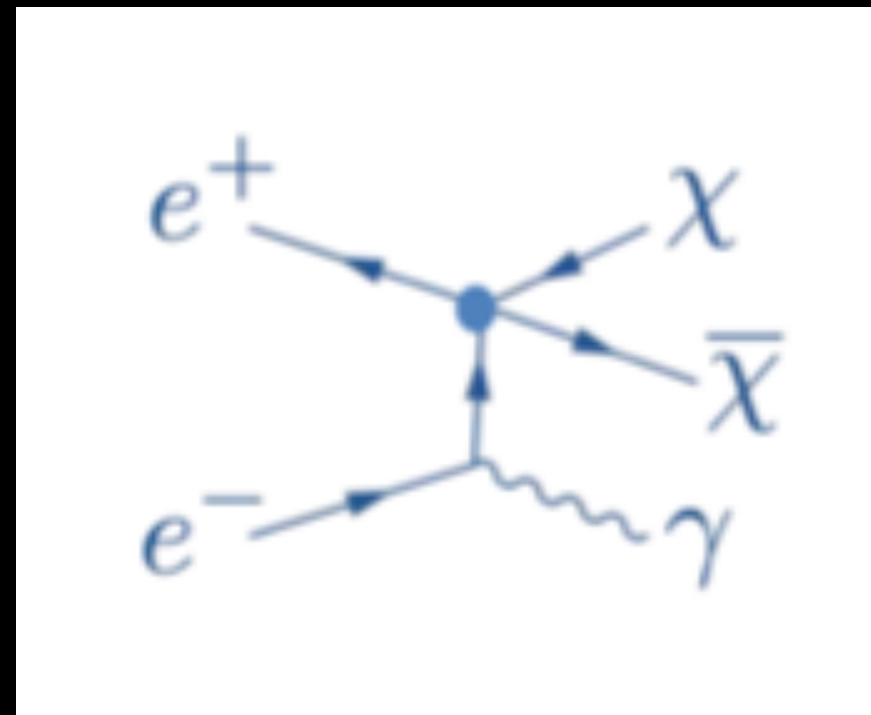
Dark Matter search @ CEPC

Mono-photon@CLIC

CLIC DM studies

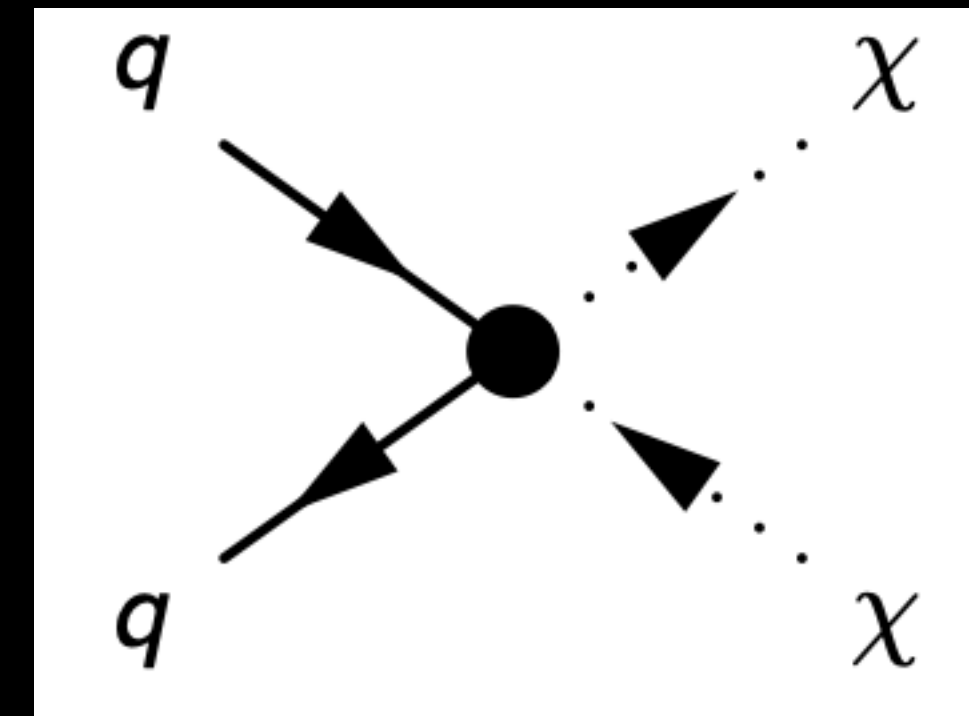
Ulrike Schnoor, J.-J. Blaising, P. Roloff

2020-06-17



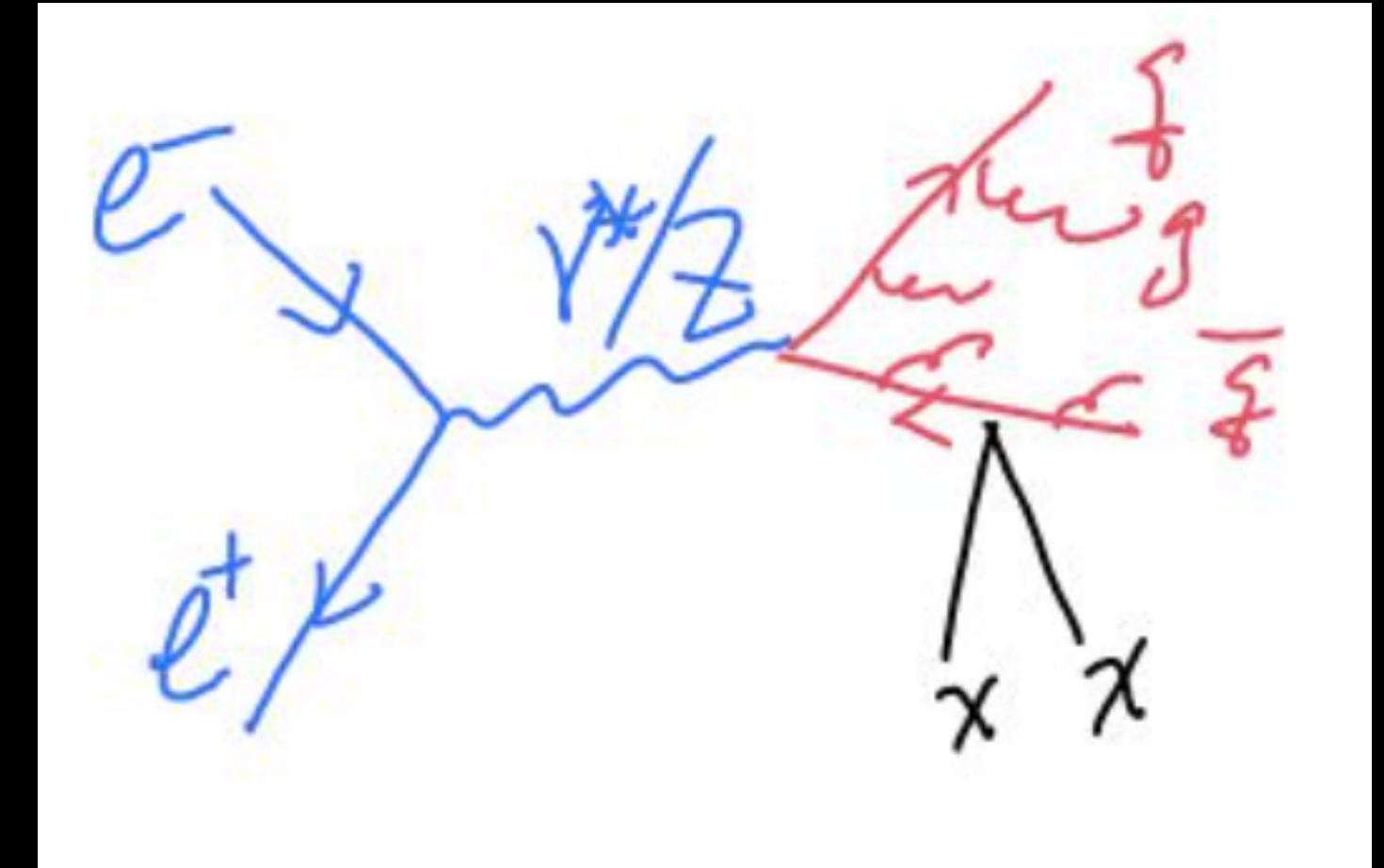
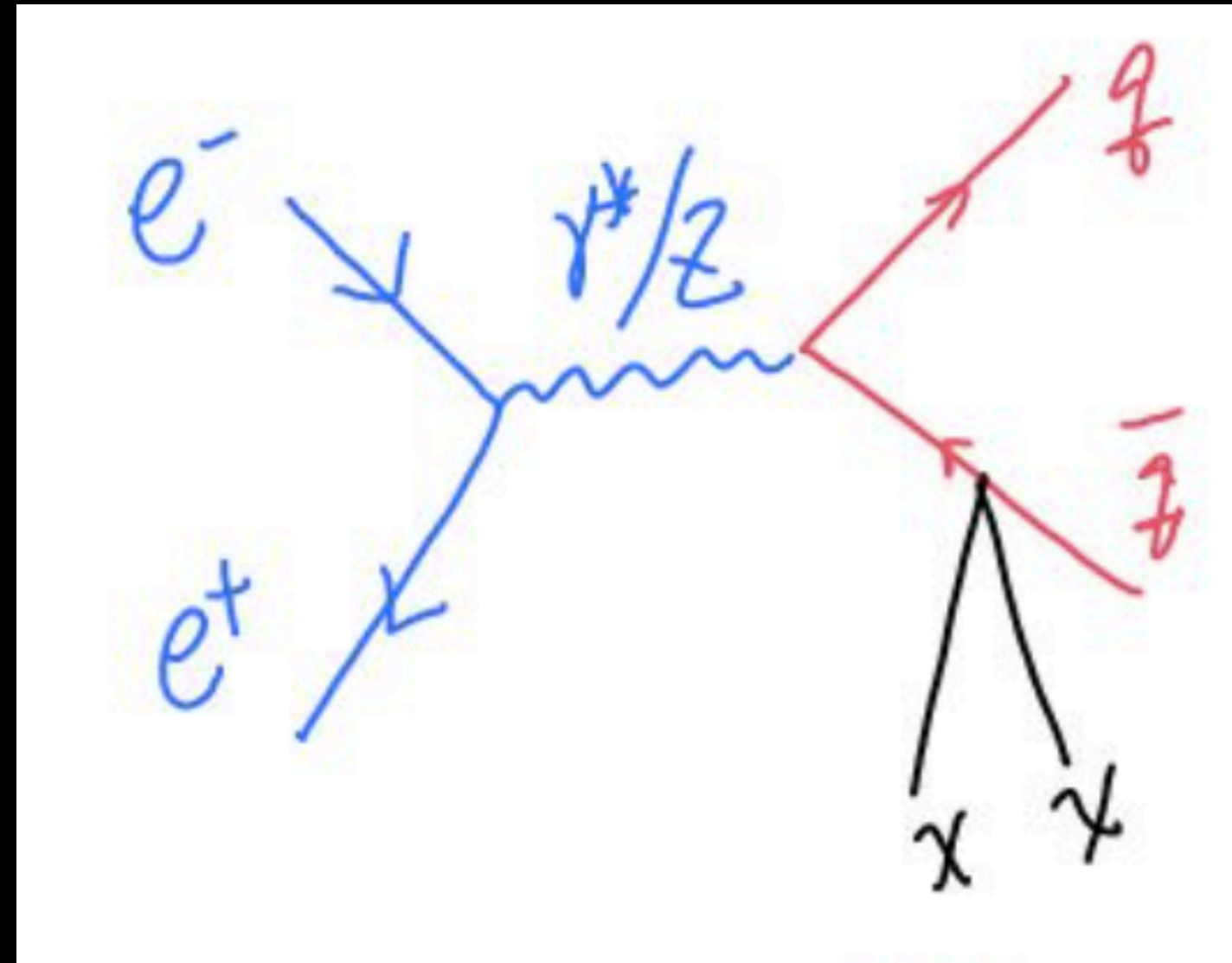
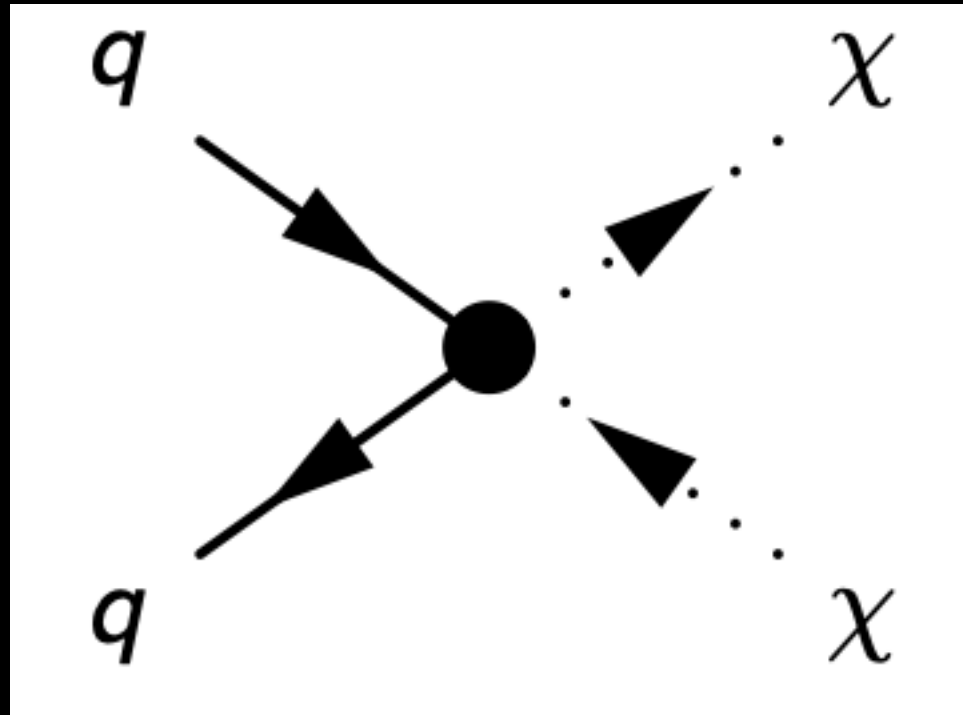
$$e^+ e^- \rightarrow \chi_d \chi_d \gamma$$

Mono-jet @ LHC



We “hope” DM can interact with hadron matter.

Dark Matter search @ CEPC



Jets + missing E

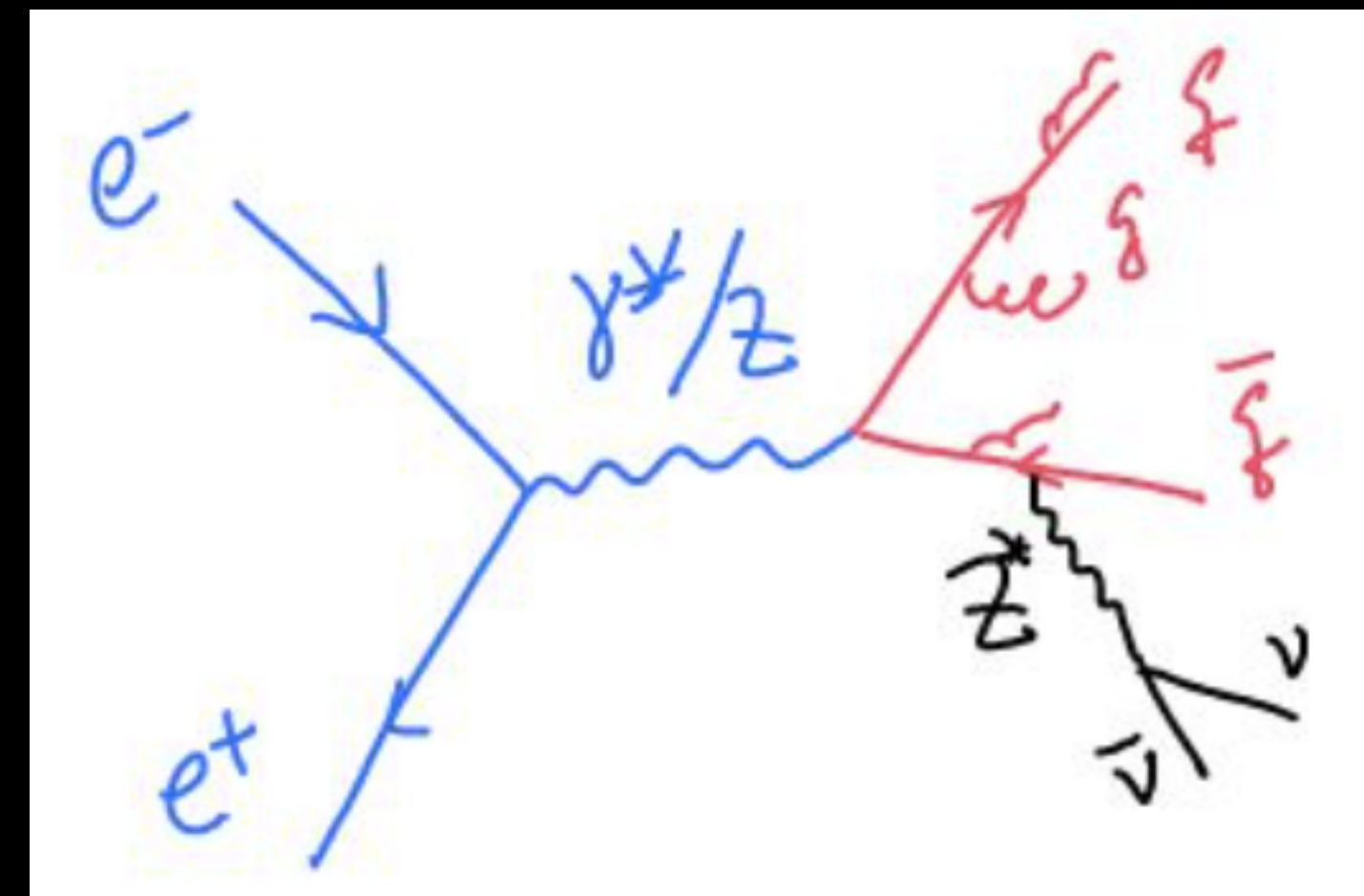
Dark Matter search @ CEPC

Mono-jet background from ATLAS

Data-driven backgrounds

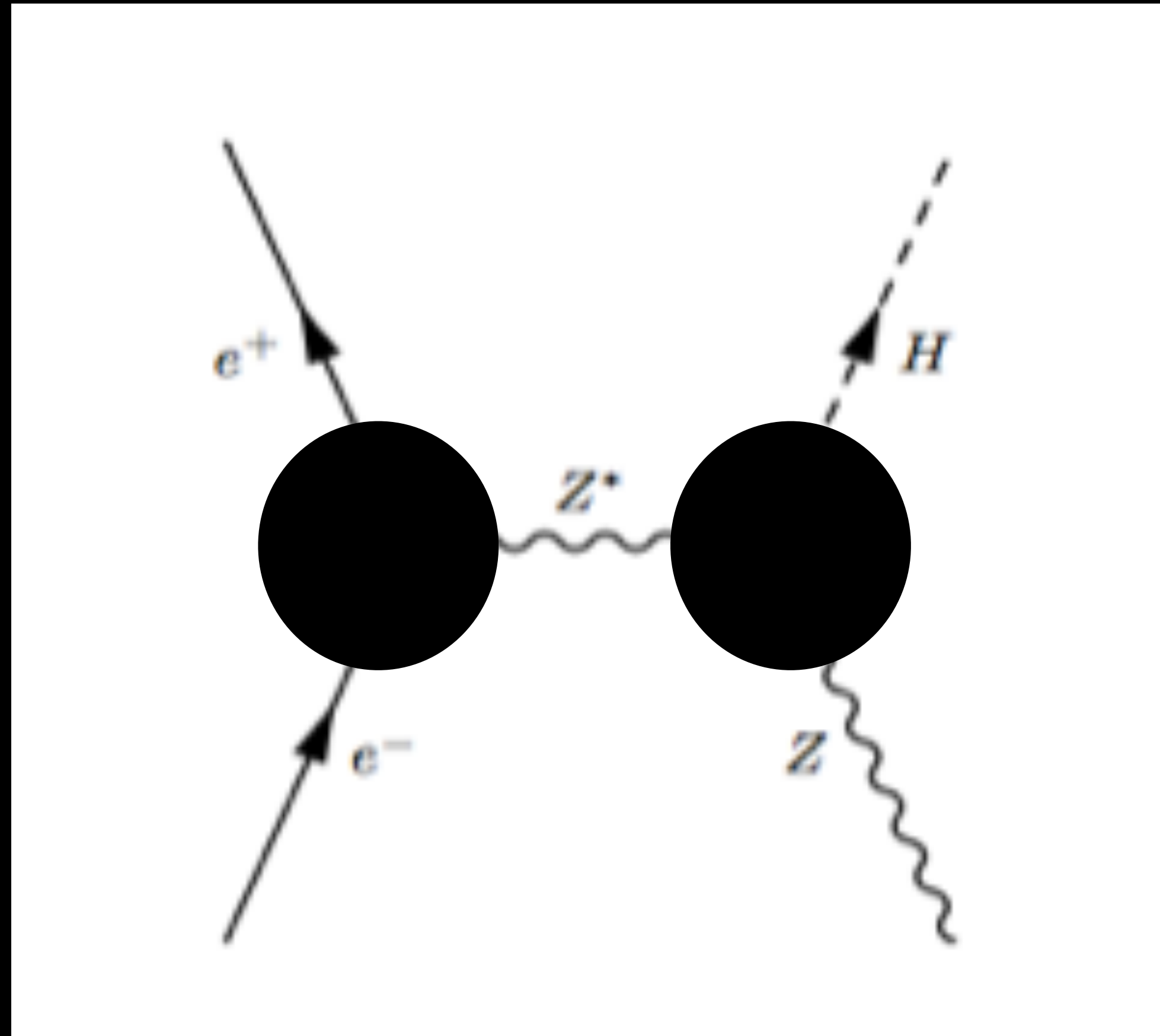
Background	Reason/source
$Z \rightarrow \nu\nu + \text{jet}(s)$	Irreducible, single largest background

“Guess” the main background



Dark Matter search @ CEPC

What if DM interacts with electrons or even gauge bosons?



Dark Matter search @ CEPC

- Any research done at ILC?
- CEPC Precision Matters (background, signal, simulation etc.)
- Improvement of Machine Learning?