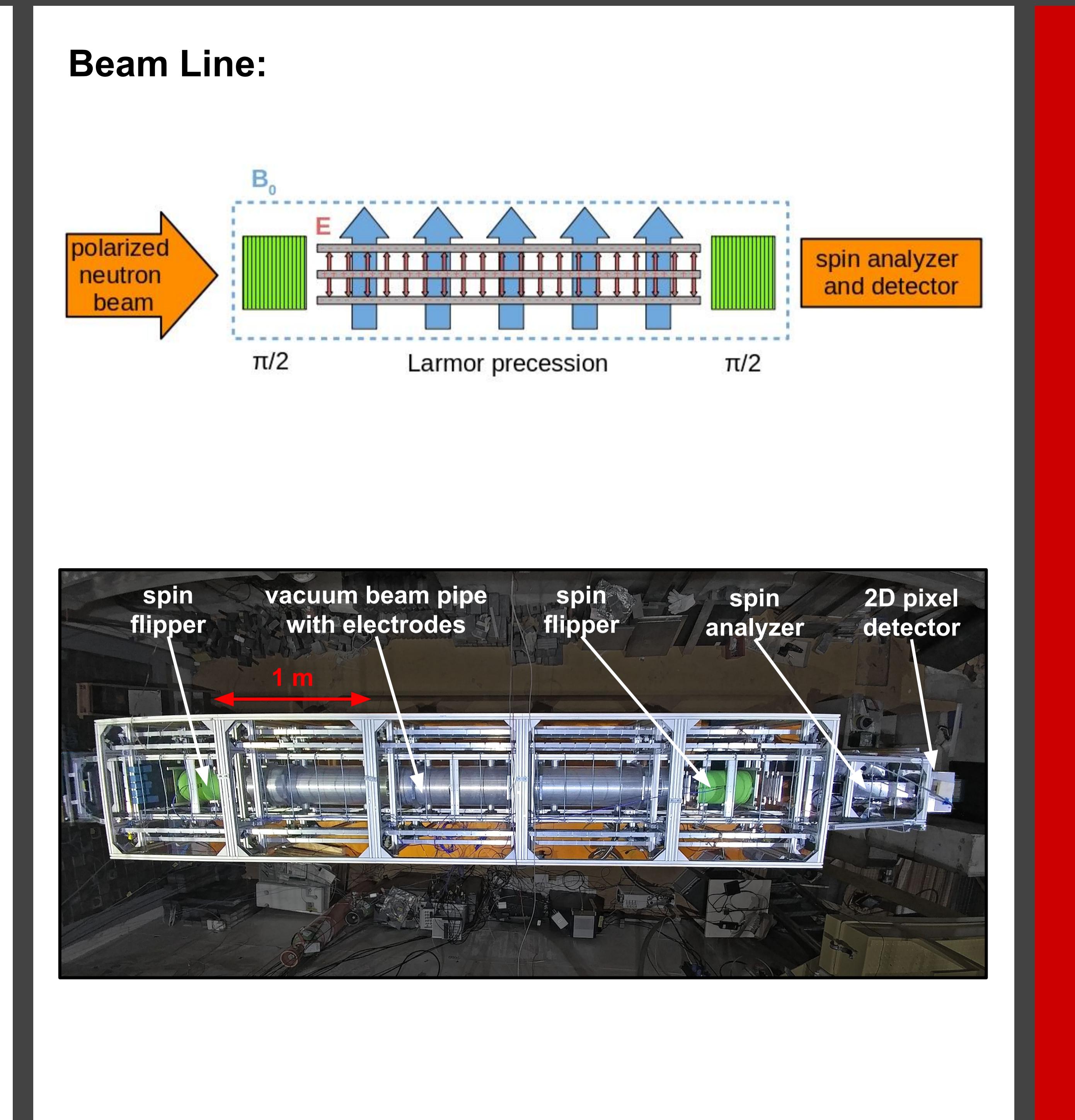
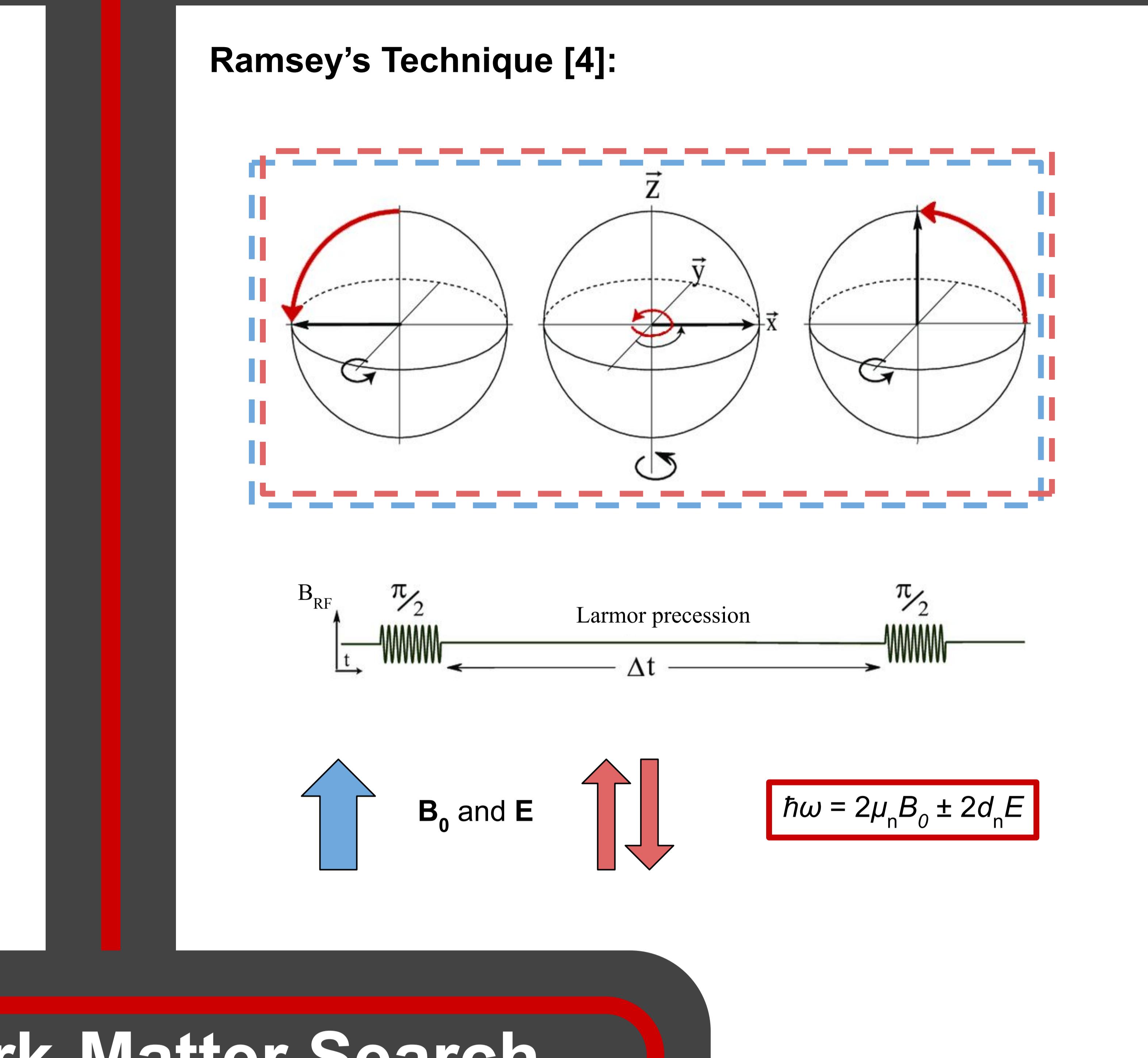
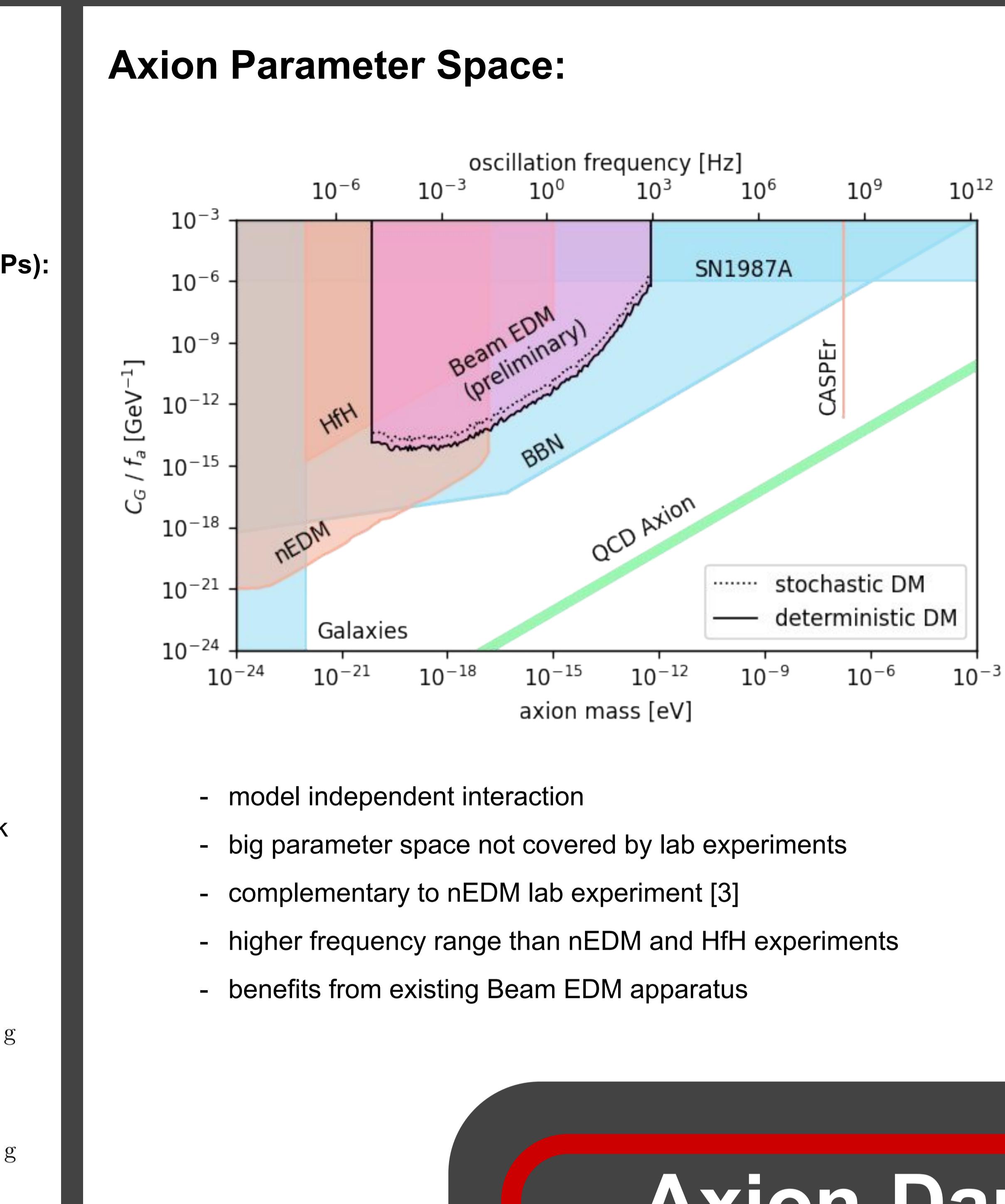
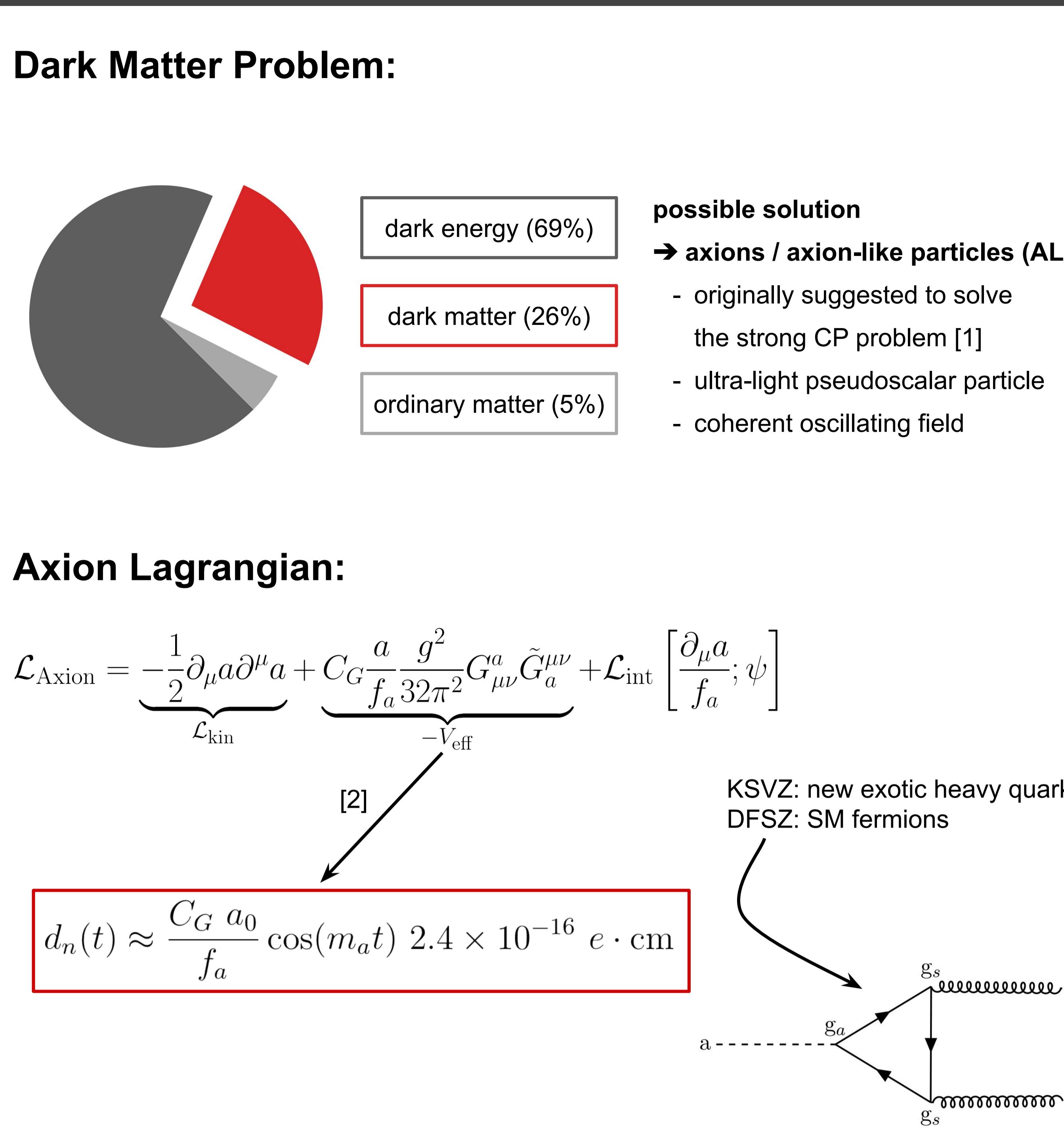


## Auxiliary Measurements

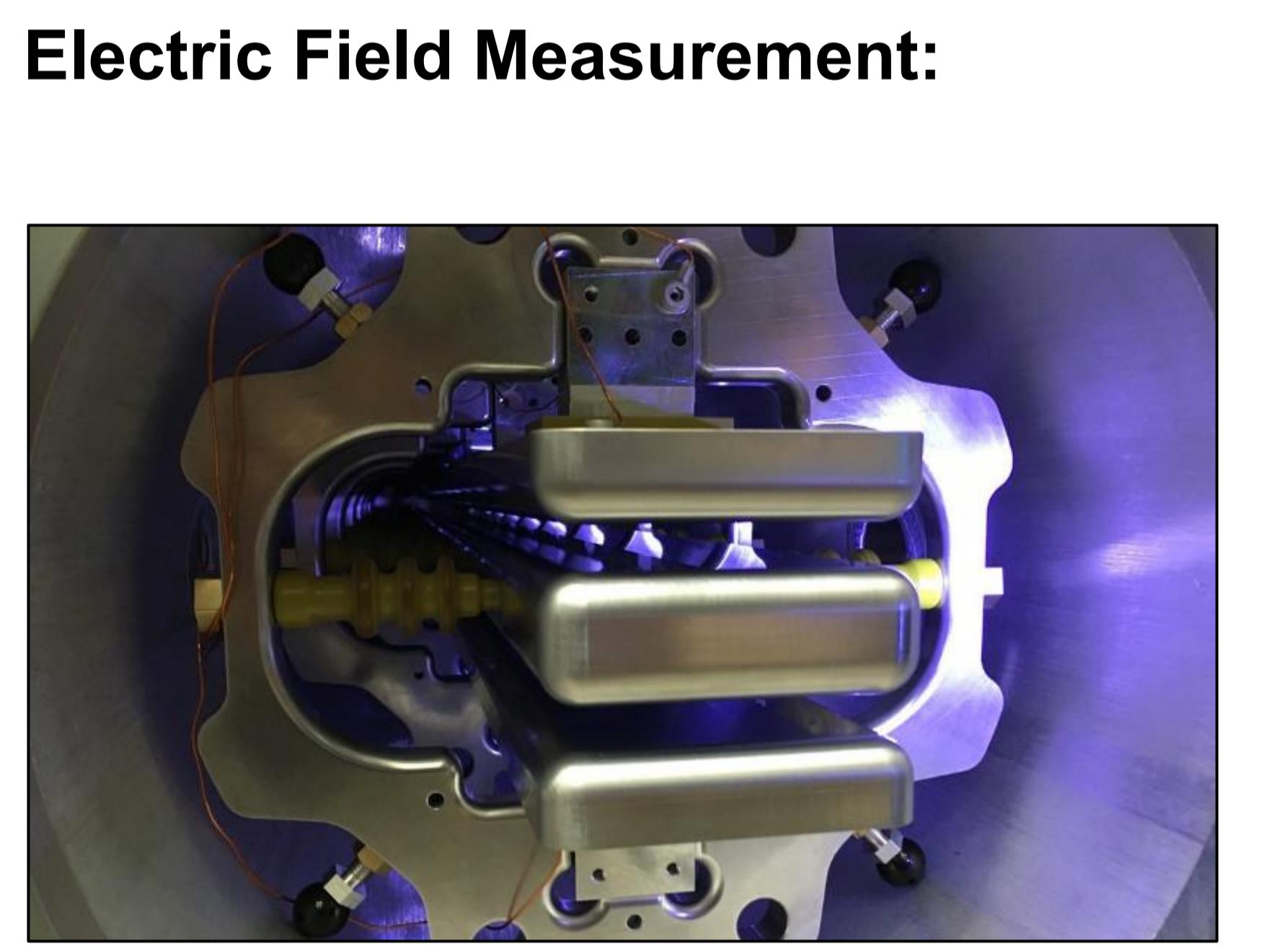
*u*<sup>b</sup>

<sup>b</sup> UNIVERSITÄT  
BERN  
AEC  
ALBERT EINSTEIN CENTER  
FOR FUNDAMENTAL PHYSICS

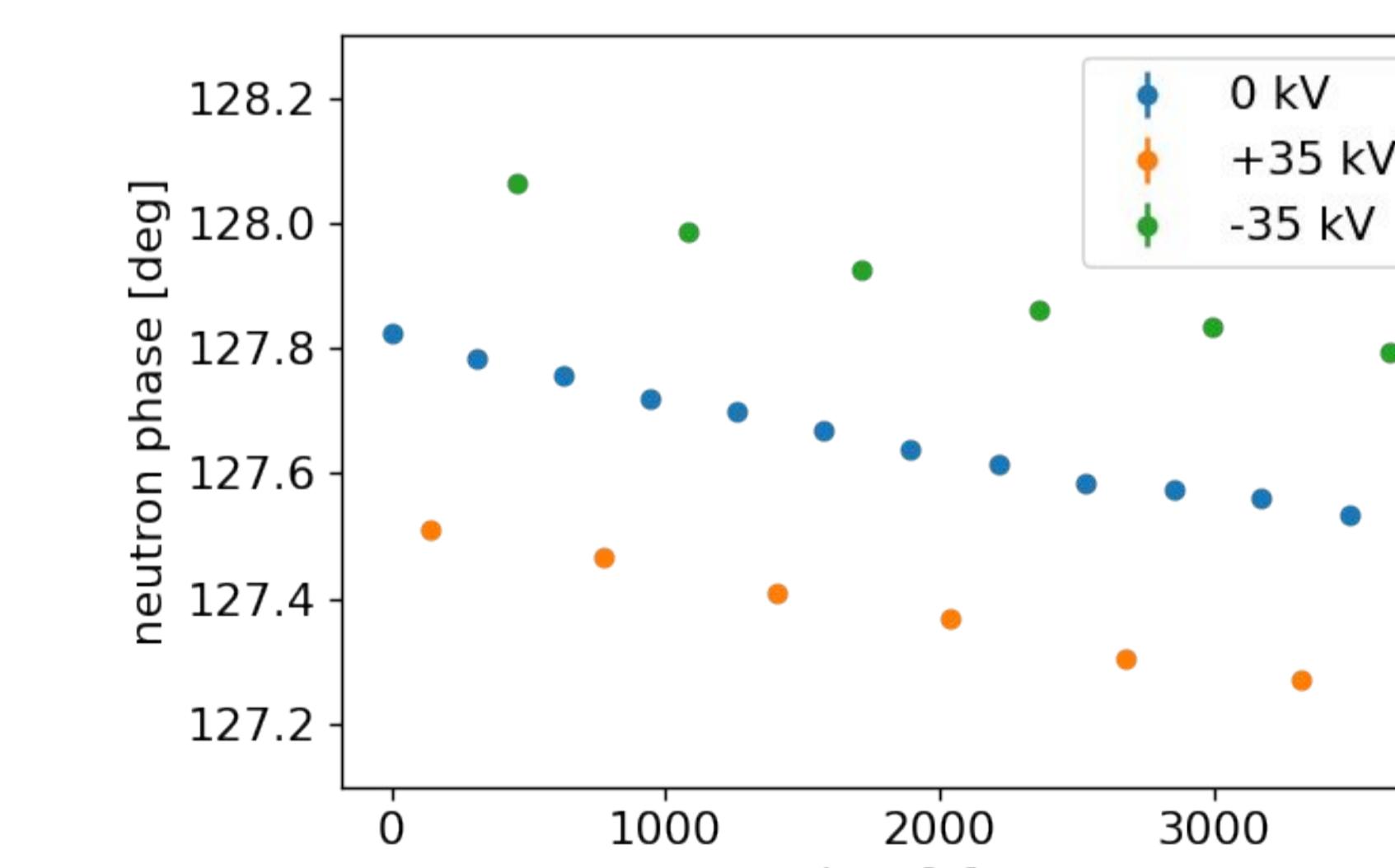
## Motivation & Theory



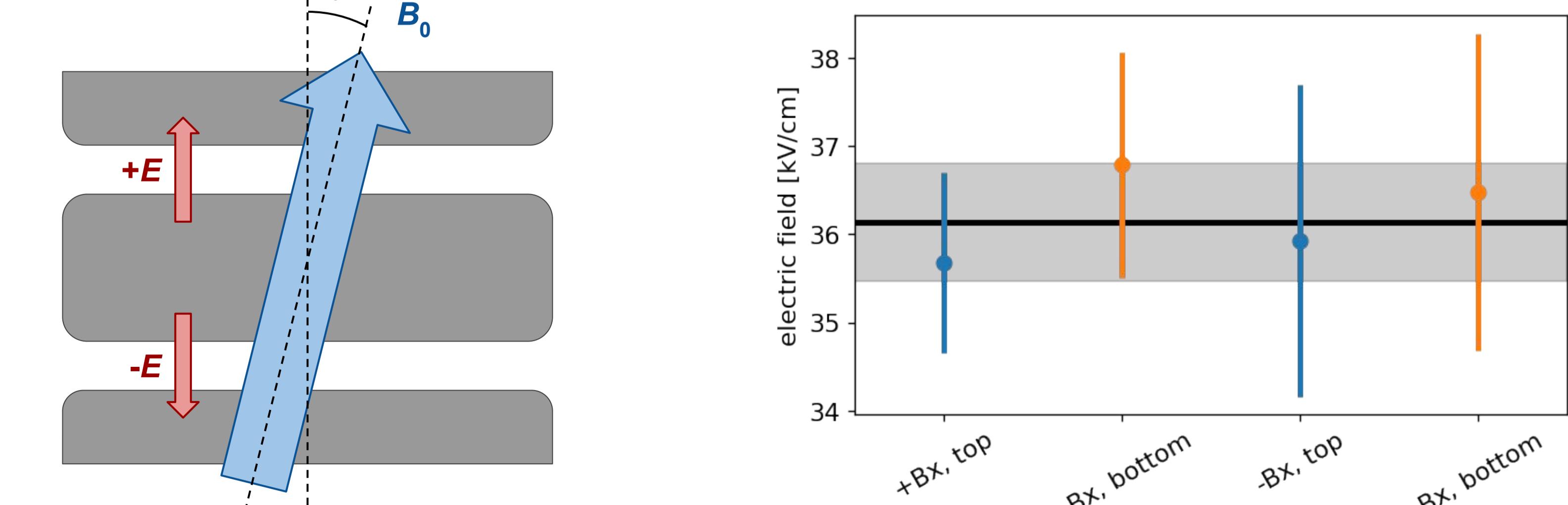
## Experimental Setup



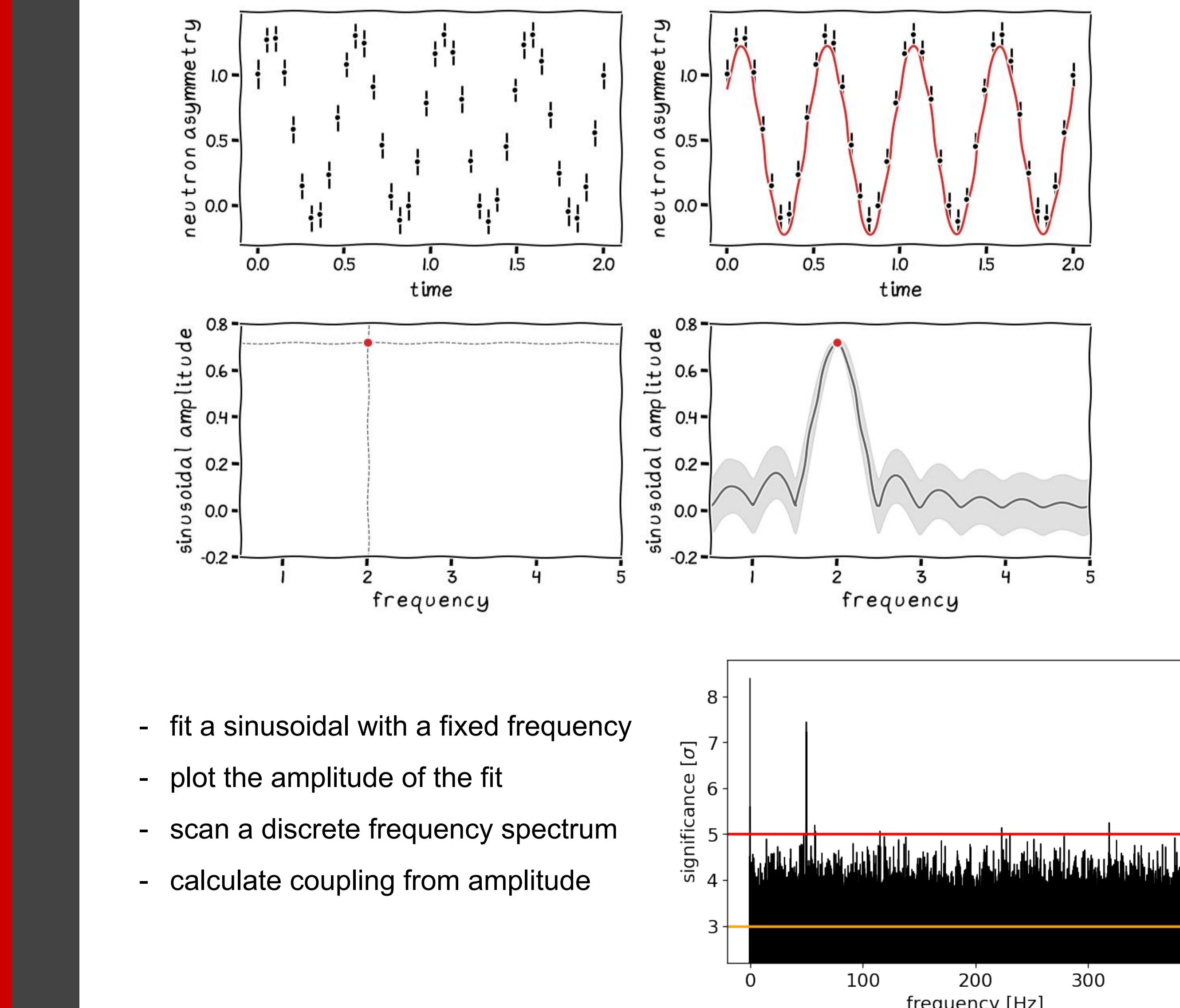
relativistic  $v \times E$  effect:



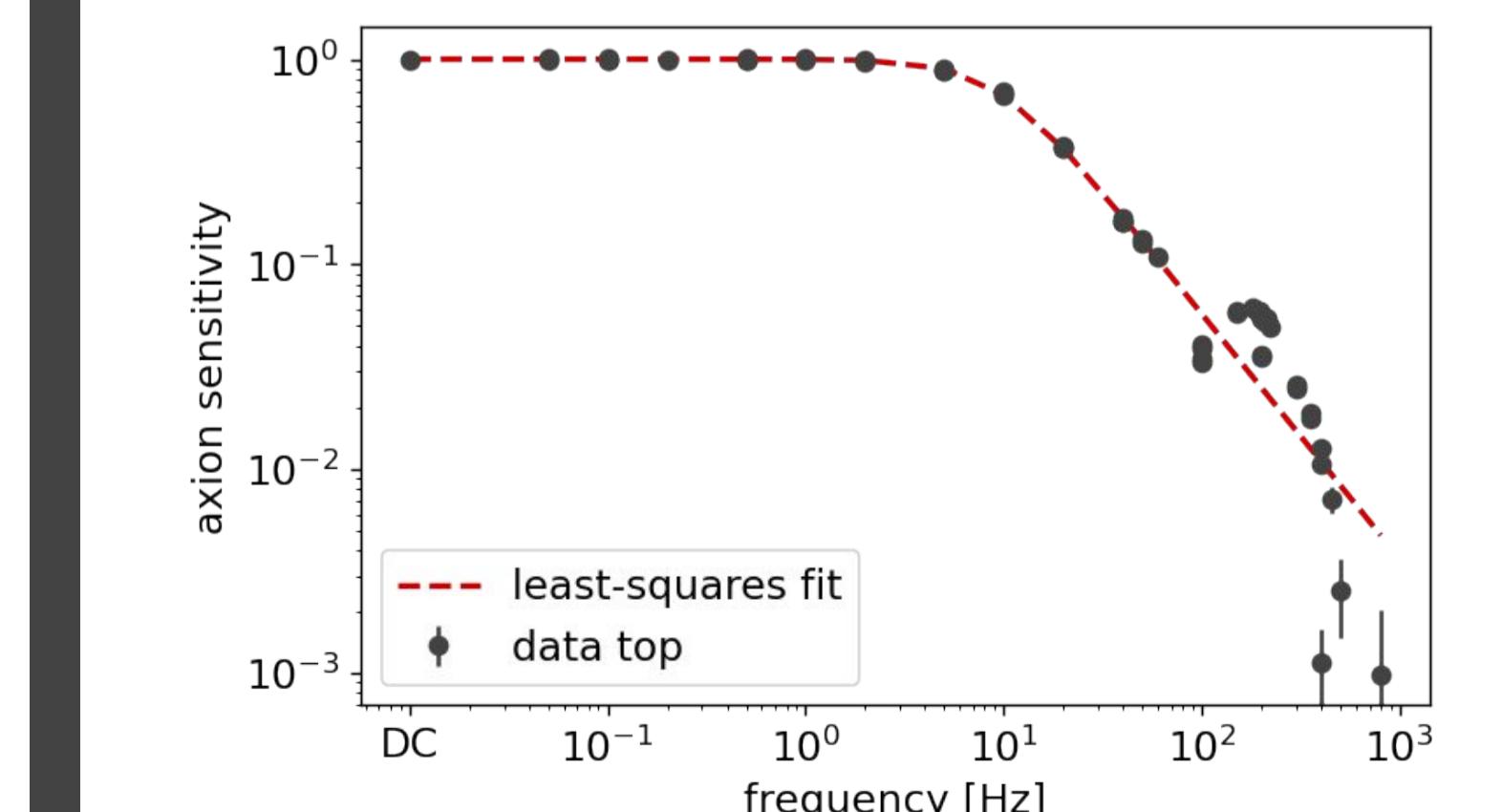
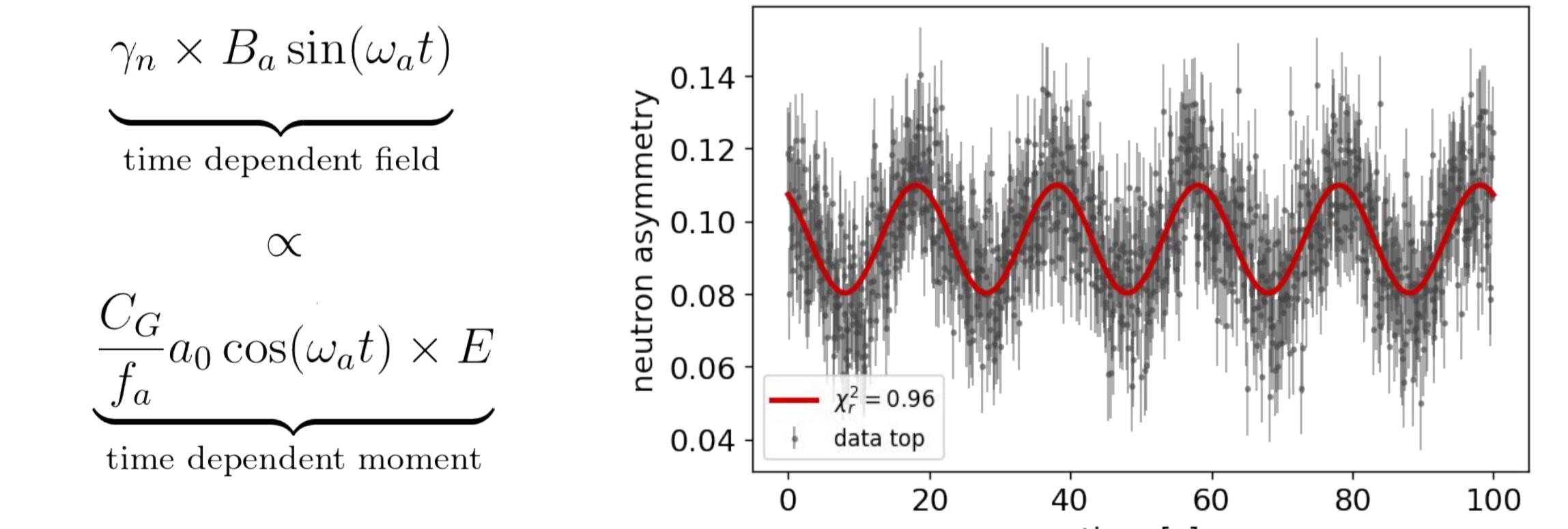
- electric field cycles: 0 / + / 0 / - / 0 / + / ...
- 0 kV measurements used for drift correction
- four measurements in agreement
- non-invasive tool to check electric field



**Least-Squares Spectral Analysis:**



**Artificial Axion Signal via Magnetic Interaction:**



- conclusion**
- frequency dependent sensitivity
  - so far no axion signal found
  - final analysis ongoing

- [1] Peccei, R. D. & Quinn, H. R. CP Conservation in the Presence of Pseudoparticles. *Phys. Rev. Lett.* **38**, 1440–1443 (1977).
- [2] Stadnik, Y. V. & Flambaum, V. V. Axion-induced effects in atoms, molecules, and nuclei: Parity nonconservation, anapole moments, electric dipole moments, and spin-gravity and spin-axion moment-mass couplings. *Phys. Rev. D* **89**, 043522 (2014).
- [3] Alford, C. et al. Axion Dark Matter from Axion-Like Particles. *Phys. Rev. X* **7**, (2017).
- [4] Ramsey, N. F. A Molecular Beam Resonance Method with Separated Oscillating Fields. *Phys. Rev.* **78**, 695–699 (1950).

## Analysis & Results

