

# A new limit of the $^{129}\text{Xe}$ Xenon Electric Dipole Moment

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The Baryon asymmetry is one of the unsolved big questions of Cosmology. Most explanations for the Baryon asymmetry involve modifications of the Standard Model which generate additional CP violating interactions. This is one reason to search for CP violating interactions beyond the Standard Model. These CP violating interactions will also generate Electric Dipole Moments (EDM) of elementary particles, which are experimentally detectable.

In my talk, I will first motivate in a nut shell why the discovery potential of a baryonic EDM in a complex, composite system like the  $^{129}\text{Xe}$  nucleus is higher than the discovery potential of the direct search for the EDM of the baryons of interest: proton and neutron.

Second I will introduce our experimental method: The He-Xe-spin clock. He-Xe-spin clocks are the most accurate clocks today and we reached already an accuracy level well beyond nHz. Beside the EDM search we employed and will employ them for other searches for physics beyond the Standard Model.

Third I will present the setup located at the Forschungszentrum Jülich and the first preliminary result of our ongoing  $^{129}\text{Xe}$  EDM search performed by the **MIXe $\vec{d}$**  collaboration (**M**eamuremnet and **I**nvestigat**I**on of the **X**enon-129 **e**lectric **d**ipole moment).