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## Electric field studies for nEDM experiments

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The sensitivity of a nEDM experiment is linearly proportional to the applied electric field strength. It is therefore important to find ways to maximise the electric field strength in nEDM Ramsey chamber. In the current room temperature PSI experiment the applied electric field is partly limited by depolarisation of the mercury co-magnetometer when the electric field is reversed. We are studying this depolarisation in a small mercury magnetometer setup. At the University of Sussex we are also investigating the maximum electric field possible for a cryogenic Ramsey chamber. This involves performing high voltage breakdown measurements in liquid helium to understand the mechanisms involved.

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