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Lattice calculation of neutron electric dipole moment with overlap fermions

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We report our calculation of the neutron electric dipole moment of the contribution from the θ term with overlap fermions on the 2+1-flavor RBC/UKQCD domain wall lattices 24I and 32ID. For the 24I lattice the size is 2.65 fm and the pion mass is 337 MeV and for the 32ID lattice the size is 4.58 fm and the pion mass is 171 MeV. In order to solve the large-volume problem, the cluster-decomposition error reduction (CDER) technique is utilized to improve the signal-to-noise ratio especially for the lattice with larger volume.

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