



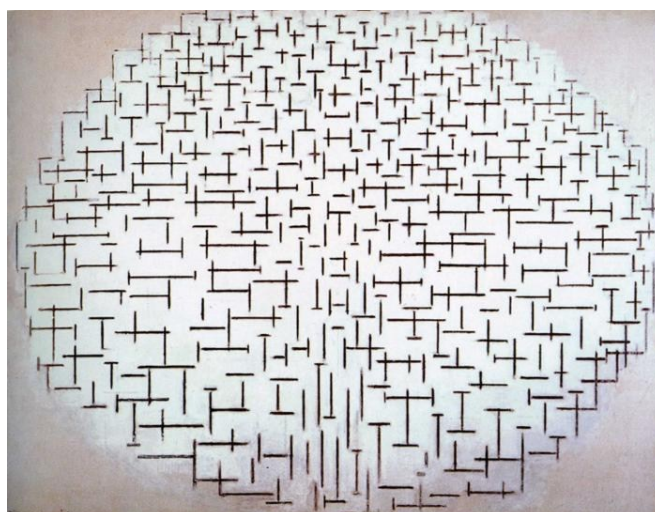
24th May 2012 - 10:00
Building 49, room 108

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Using cold molecules to measure the electron's electric dipole moment - current status and future prospects

The electric dipole moment (EDM) of the electron is a measure of the electron's shape, a non-zero value implying that the electron is not spherical. A non-zero EDM violates time-reversal symmetry and implies that there is new physics beyond the Standard Model of particle physics. Some heavy, polar molecules are exceptionally sensitive to the electron EDM. We have made the most precise measurement of the electron EDM by measuring how the spin-precession rate of YbF molecules changes in an applied electric field. In my talk I will first describe the experiment and our recent result. Then I will discuss how we plan to improve this measurement by using a cryogenic buffer gas source of YbF molecules, and by directly laser cooling the molecules, and I will outline the current status of our work in these new directions



Pier and Ocean, by
Piet Mondrian