

## Critical Casimir interaction of ellipsoidal colloids with a planar wall

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Based on renormalization group concepts and explicit mean field calculations we study the universal contribution to the effective force and torque acting on an ellipsoidal colloidal particle which is dissolved in a critical fluid and is close to a homogeneous planar substrate. At the same closest distance between the substrate and the surface of the particle, the ellipsoidal particle prefers an orientation parallel to the substrate and the magnitude of the fluctuation induced force is larger than if the orientation of the particle is perpendicular to the substrate. The sign of the critical torque acting on the ellipsoidal particle depends on the type of boundary conditions for the order parameter at the particle and substrate surfaces, and on the pivot with respect to which the particle rotates.