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Short distance expansion for fluctuation induced interactions THORSTEN EMIG, CNRS and MIT, GIUSEPPE BIMONTE, Universita' di Napoli Federico II — Fluctuation induced interactions become most prominent in close to proximity to surfaces. Examples include van der Waals and Casimir forces, heat transfer, and spectral shifts for atoms and molecules. In many situations, the surfaces are curved or structured which makes the computation of the interaction in general complicated. Here we present a versatile and powerful approach to this problem which is based on a derivative expansion. It applies to distances much smaller than the radii of surface curvature. Explicit results include orientational effects for anisotropic particles, thermal effects, and spectral modifications.

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