Existence of minimizers for Schrödinger operators under domain perturbations

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In this talk we shall discuss the existence of minimizers for Rayleigh quotients $\mu_\Omega = \inf \frac{\int_\Omega |\nabla u|^2}{\int_\Omega V|u|^2}$ under domain perturbations, here Ω is a domain in $\mathbb{R}^N$, and V is a nonzero nonnegative function that may have singularities on $\partial\Omega$. As a model for our results one can take Ω to be a Lipschitz cone and V to be the Hardy potential $V(x) = \frac{1}{|x|^2}$.

This is a joint work with Kyril Tintarev.