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第 29 回 幾何と解析セミナーのお知らせ

[概　要]　 Optimal constants in Poincare inequalities with traces, Faber-Krahn and Saint-Venant inequalities for the Robin-Laplacian, all of them involve a control of some L^q-norm of a function $u \in W^{1,p}(\Omega)$ in terms of the L^p-norm of the gradient and some L^s-norm of the trace of u on $\partial\Omega$. The optimal constant is not only sharp, but it is also independent on the geometry of the domain Ω. Quite often, these kind of optimal inequalites can be set in terms of shape optimization problems for eigenvalues.

In this talk, I will start with a survey of recent results involving spectral isoperimetric inequalities for the eigevalues of the Laplace operator. Then, I will focus on some new results involving the Robin-Laplacian and finally I will show how to prove the quantitative Faber-Krahn inequality by free discontinuity methods.