1071-35-64 **J. Fleckinger**, **J.-P. Gossez*** (gossez@ulb.ac.be) and **F. de Thélin**. *Maximum and antimaximum principles: beyond the first eigenvalue.*

Consider the Dirichlet problem

$$-\Delta u = \mu u + f \textit{ in } \Omega,\ u = 0 \textit{ on } \partial\Omega,$$

with Ω a smooth bounded domain in $I\!R^N$. The well-known maximum and antimaximum principles give informations on the sign of the solution u when the parameter μ varies near the first eigenvalue λ_1 of the corresponding homogeneous problem. Our purpose in this talk is to introduce an analogue of these two principles when μ varies near a higher eigenvalue λ_k. Nodal domains play a central role in our study, as well as, in some cases, the Payne conjecture relative to the nodal line of a second eigenfunction in the plane. (Received February 13, 2011)