

It is our purpose in this talk to present a minimax formula for the principal eigenvalues of a (generally non selfadjoint) elliptic problem of the form:

$$\begin{cases} - \operatorname{div} (A(x) \nabla u) + \langle a(x), \nabla u \rangle + a_0(x) u = \lambda m(x) u & \text{in } \Omega, \\ u = 0 & \text{on } \partial\Omega, \end{cases}$$

where  $m(x)$  is a weight function which may be indefinite. Several applications will be considered. One concerns the antimaximum principle. Another one concerns the asymptotic behaviour of the principal eigenvalues when the first order coefficient  $a(x)$  becomes large. There are also applications to some inverse problems. (Joint work with T.Godoy and S.Paczka).