Eigenvalues in Symmetry subspaces

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This is joint work with B. Helffer, M. Hoffmann-Ostenhof and N. Nadirashvili. We consider 2-dimensional Schrödinger operators on bounded domains with suitable boundary conditions which commute with the actions of a group. For certain cases (dihedral group) we prove that the multiplicity of the groundstate eigenvalues in the symmetry subspaces associated to the irreducible representations of the group equals the degree of the corresponding irreducible representation. Furthermore for some cases it is possible to order these groundstate eigenvalues in the same way as the radial problem would imply.