

## **Multiplicity results and qualitative properties for Neumann semilinear elliptic problems**

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### **Abstract**

In this paper we establish the existence of multiple ordered classical solutions for Neumann semilinear elliptic problems and provide qualitative information about them. No symmetry assumptions are required neither on the nonlinearity nor on the domain. For some results, the growth of the nonlinearity at infinity is arbitrary. We also consider the cases when the nonlinearity is either superlinear or asymptotically linear with strong resonances. Extensive use is made of the Mountain Pass Theorem and Leray-Schauder topological degree.