

# Multiple positive solutions for some semilinear elliptic equations

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We prove existence of multiple positive solutions for the problem

$$Lu = f(u) \text{ in } D, u = 0 \text{ on } \partial D,$$

where  $L$  is a linear differential operator in general form and  $f$  is a concave-convex nonlinearity. Several different applications are considered. Proofs involve a combination of the method of sub and supersolutions and index theory.