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**The method of the extended functional  
and solvability of elliptic problems with supercritical exponents**

The talk will focus on the method of the extended functional which makes it possible to find an extremal point  $\lambda^*$  of the given equation  $F(u, \lambda) = 0$  through the variational problem of the following form:

$$\lambda^* = \max_u \min_{\xi} \{L(u, \xi)\}$$

where the functional  $L(u, \xi)$  is determined constructively in terms of the function  $F(u, \lambda)$ . A feature of this method is the fact that it allows to establish the existence of super-sub solutions using a non-constructive way. As an application of this property, we present recent result (obtained in a joint work with Th. Runst (Jena)) on the existence of weak positive solutions for equations with p-Laplacian in the case of supercritical exponents of nonlinearities.