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For a scan of this review see the [web version](#).

MSC:

- 35J60 Nonlinear elliptic equations
- 35R35 Free boundary problems for PDEs
- 49J20 Existence theories for optimal control problems involving partial differential equations
- 49M99 Numerical methods in optimal control
- 35A15 Variational methods applied to PDEs
- 76W05 Magnetohydrodynamics and electrohydrodynamics

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Keywords:

semilinear elliptic equation; free boundary problem; plasma confinement; Tokamak; variational method; iteration scheme; self-adjoint elliptic operator; existence of a solution

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