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Section:

10. Partial Differential Equations

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Degree of densely defined $(S)_+$ operators and applications.

The introduction of the degree for densely defined operators of the class $(S)_+$, the calculation of the index of the critical points are given. We consider unbounded nonlinear operators with special unbounded linearization that is used for the evaluation of the index. The applications for nonlinear elliptic operators with strong coefficient growth and for the bifurcation problems are provided.