

Operator equations and systems with potential-type nonlinearities

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Some recent results on the variational characterization of the fixed points of contraction-type operators are applied in this paper to semilinear operator equations and systems with linear parts given by positively defined operators, and nonlinearities of potential-type. Mihlin's variational theory is also involved. Applications are given to elliptic semilinear equations and systems.

References

- [1] Precup, R., *Nash-type equilibria and periodic solutions to nonvariational systems*, Adv. Non-linear Anal., DOI:10.1515/anona-2014-0006.
- [2] Mihlin, S.G., *Linear Partial Differential Equations*, Vysshaya Shkola, Moscow, 1977 (Russian).
- [3] Brezis, H. *Functional Analysis, Sobolev Spaces and Partial Differential Equations*, Springer, New York, 2011.