

## SOME NONLINEAR ELLIPTIC PROBLEMS WITH UNBOUNDED AND DECAYING POTENTIALS.

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Applying the “famous” Strauss Theorem and Solimini concentration compactness lemma some weighted Sobolev compact embeddings results are established for radial and cilindric symmetric functions, respectively. As application Existence and multiplicity result are obtained for a class of nonlinear elliptic problems in  $\mathbb{R}^N$  involving unbounded and decaying potentials. Also, by Pohozaev type identity non existence result is proved for the above class of problem. These results extend mainly that in the papers [1, 2].

### References

- [1] J. SU, Z-Q WANG AND M. WILLEM, Weighted Sobolev embedding with unbounded and decaying radial potentials, *J. Diff. Eqns.*, **238**, 201–219, 2007.
- [2] M. BADIALE AND S.ROLANDO, A note on nonlinear elliptic problems with singular potentials, *Rend. Lincei Mat. Appl.*, **16**, 1–13, 2006.

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