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**Infinitely many solutions for a class of sublinear Schrödinger-Maxwell equations in  $\mathbb{R}^N$  with indefinite weight functions.** (English) Zbl 1313.35078  
Differ. Integral Equ. 27, No. 1-2, 45-57 (2014).

The authors consider the sublinear Schrödinger-Maxwell equation

$$\begin{aligned} -\Delta u + V(x)u + K(x)\phi u &= a(x)|u|^{q-1}u, \\ -\Delta \phi &= K(x)u^2. \end{aligned} \tag{1}$$

Despite the title, both equations are posed in  $\mathbb{R}^3$ . Here,  $q \in (0, 1)$  and some hypotheses are given on  $V(x)$ ,  $K(x)$  and  $a(x)$ . The authors use the symmetric mountain pass theorem to prove existence of infinitely many solutions.

The main novelty with respect to other known results is the fact that  $V$  may change sign and does not diverge at infinity, so that compact Sobolev embeddings are not available. This compactness problem is ruled out because  $a(x)$  is negative near infinity under their assumptions.

Reviewer: David Ruiz (Granada)

**MSC:**

**35J20** Variational methods for second-order elliptic equations

**35B38** Critical points of functionals in context of PDEs (e.g., energy functionals)

Cited in **2** Documents

**Keywords:**

stationary Schrödinger-Maxwell equations; variational methods