LOCAL MOUNTAIN PASS FOR A CLASS OF ELLIPTIC SYSTEMS

CLAUDIANOR O. ALVES

Our aim is to show a result involving the existence and concentration of positive solutions for the following class of elliptic systems

$$(S) \quad \begin{cases} -\epsilon^2 \Delta u + W(x)u = Q_u(u,v) \ \text{ in } \ I\!R^N \\ -\epsilon^2 \Delta v + V(x)v = Q_v(u,v) \ \text{ in } \ I\!R^N \\ u(x), v(x) \to 0, \ \text{ as } \ |x| \to \infty \\ u, v > 0 \ \text{ in } \ I\!R^N \end{cases}$$

where V, W are nonnegative Hölder continuous functions and Q is a p-homogeneous function with $2 < p < 2N/(N-2)$ and $N \geq 3$.

The main result completes a result due Del Pino & Felmer [1] for the problem

$$\begin{cases} -\epsilon^2 \Delta u + V(x)u = |u|^{p-2}u, \ \text{ in } \Omega. \\ u = 0, \ \text{ on } \ \partial\Omega \end{cases}$$

REFERENCES

[1] M. del Pino and P.L. Felmer, *Local Mountain Pass for semilinear elliptic problems in unbounded domains.* Calc. Var. 4 (1996), 121-137.

(C. O. Alves) DEPARTAMENTO DE MATEMÁTICA E ESTATÍSTICA, UNIVERSIDADE FEDERAL DE CAMPINA GRANDE, CEP: 58109-970 CAMPINA GRANDE PB, BRAZIL

E-mail address: coalves@dme.ufcg.edu.br