

References of Lecture Notes of Juncheng Wei

In this lecture series, I shall concentrate on the applications of finite dimensional and infinite dimensional Liapunov-Schmidt reduction methods to two simplest semilinear scalar equations

$$(I) \quad \Delta u - u + u^3 = 0 \text{ in } R^N, \quad u \in H^1(\mathbb{R}^N)$$

$$(II) \quad \Delta u + u - u^3 = 0 \text{ in } \mathbb{R}^N$$

For finite dimensional reduction method, I will use equation (I). The following references are useful:

[1] Frank Pacard, M. Musso and J. Wei, Finite-energy sign-changing solutions with dihedral symmetry for the stationary non linear Schrödinger equation *Journal of European Mathematical Society* 14(2012), no.6, 1923-1953.

[2] WW Ao, M. Musso, F. Pacard and J. Wei, Solutions without any symmetry for semilinear elliptic problems, *Journal of Functional Analysis* 270(2016), no.3, 884-956.

[3] A. Malchiodi, Some neqw entire solutions of semilinear elliptic equations in R^n , *Adv. Math.* 221, no. 6, (2009), 1843-1909.

For infinite dimensional reduction method, I will use equation (II). The following references are useful:

[4] M. del Pino, M. Kowalczyk and J. Wei, Concentration on curves for nonlinear Schrödinger equations, *Communications on Pure and Applied Mathematics* 60 (2007), no. 1, 113-146.

[5] M. del Pino, M. Kowalczyk and J. Wei, Entire Solutions of the Allen-Cahn Equation and Complete Embedded Minimal Surfaces of Finite Total Curvature *Journal of Differential Geometry* 83(2013), no.1, 67-131.