Infinitely many nonradial positive solutions for multi-species nonlinear Schrodinger systems in $\mathbb{R}^N$

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In this talk, I will report our recent results, based on the joint work of Doctor Tuoxing Li and Professor Jucheng Wei, on the multi-species nonlinear Schrodinger systems in RN. By Ljapunov-Schmidt reduction arguments, we construct infinitely many nonradial positive solutions of the these system under some mild assumptions on potentials and coupling parameters, without any symmetric assumptions on the limit case of the above system. Our result, giving a positive answer to the conjecture of Pistoia and Vaira in [Pistoia-Vaira, Comm. PDEs, 2022] and extending the results in [Peng-Wang, ARMA, 2013] and [Pistoia-Vaira ,Comm. PDEs, 2022], reveals new phenomenon for the two-species in dimension two and is almost optimal for the coupling parameters.

Keywords: nonlinear Schrodinger systems, infinitely many positive solutions, reduction method, min-max argument.

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