

Some highly unstable solutions to the Allen-Cahn equation

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Abstract

In the talk I will present the construction of some families of entire solutions to the Allen-Cahn equation in dimension $N \geq 8$ with infinite Morse index. The zero level set has k connected components which are diverging graphs over the Lawson cone. The construction involves the careful analysis of $O(m) \times O(n)$ -invariant minimal surfaces. I obtained these results in collaboration with Oscar Agudelo and Michal Kowalczyk.