

## Multiple structures for quasilinear equations by the variational method

We study entire bounded solutions to the equations of variational nature. The model example here is

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\begin{equation*}
```

$$\Delta u - u + u^3 = 0 \quad \text{\mbox{in}} \quad \mathbb{R}^2.$$

```
\end{equation*}
```

Our approach is purely variational and is based on concentration arguments and symmetry

considerations. This method allows us to construct in an unified way several types of solutions

with various symmetries (radial, breather type, rectangular, triangular, hexagonal, etc.),

both positive and sign-changing. It is also applicable for more general equations in any dimension.

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The talk is based on the joint paper with L. Lerman and P. Naryshkin