



Beijing-Saint Petersburg Mathematics Colloquium

Tuesday June 16 at 15:00

zoom ID 665-9289-6418, password is 6 numbers: 4758 followed by the order of symmetry group  $S_4$

**Alexander Nazarov (PDMI RAS, St. Petersburg State University)**

**«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  $\Delta u - u + u^3 = 0$  in  $\mathbb{R}^2$ . 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.

The talk is based on the joint paper Lerman L.M., Naryshkin P.E., Nazarov A.I., Abundance of entire solutions to nonlinear elliptic equations by the variational method, *Nonlinear Analysis -- TMA*. 190 (2020), DOI 10.1016/j.na.2019.111590, 1-21.

Everyone is welcome!