СЪЮЗ НА МАТЕМАТИЦИТЕ В БЪЛГАРИЯ
ИНСТИТУТ ПО МАТЕМАТИКА И ИНФОРМАТИКА – БАН

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НАЦИОНАЛЕН КОЛОКВИУМ ПО МАТЕМАТИКА

Извънредна сбирка на Колоквиума ще се състои на 15 февруари 2018 г. (четвъртък)
от 11:15 часа в Заседателната зала на ИМИ – БАН,
София, ул. „Акад. Г. Бончев”, блок 8

Доклад на тема:

„Adiabatic limit in Ginzburg–Landau and Seiberg–Witten equations“

ще изнесе проф. Армен Сергеев от Математически институт „Стеклов”, Москва.

След доклада на проф. Сергеев ще бъде връчена наградата **Медал с лента**, присъдена му послучай 70-годишнината на ИМИ.

Поканени са всички интересуващи се.

Ръководител на Колоквиума: акад. П. Попиванов

We consider solutions of hyperbolic Ginzburg–Landau equations being the Euler–Lagrange equations for the (2+1)-dimensional Abelian Higgs model. Solutions which do not depend on time, called otherwise the vortices, are completely described by the theorem of Taubes. However we do not know much about the structure of dynamical solutions of these equations. The adiabatic limit method allows to describe the slowly moving solutions. In this limit Ginzburg–Landau equations reduce to the adiabatic equation which coincides with the Euler equation for geodesics of the space of vortices provided with the Riemannian metric determined by the kinetic energy of the considered model.

An analogous adiabatic limit may be used for the approximate description of solutions of Seiberg–Witten equations on 4-dimensional symplectic manifolds. In this limit we shall get instead of adiabatic geodesics pseudoholomorphic curves while the solutions of Seiberg–Witten equations will reduce to the families of vortices defined in the normal planes of the limiting pseudoholomorphic curve. These families should satisfy a nonlinear $\bar{\partial}$-equation which may be considered as a complex analogue of the adiabatic equation. The arising pseudoholomorphic curves may be treated as complex analogues of adiabatic geodesics.