

MAFIA - seminář, který se neodmítá

## On thin quantum layers with magnetic fields

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**Abstract:** Let  $\Sigma$  be a surface in  $\mathbb{R}^3$  and  $-\Delta_g$  the corresponding Laplace-Beltrami operator. Furthermore, define  $\Omega_\epsilon$  as the layer of the width  $\epsilon$  constructed around  $\Sigma$ . Then it is well known for some time that the Laplace operator on  $\Omega_\epsilon$  converges (after subtracting the divergent transverse energy term) to  $-\Delta_g + K - M^2$  in the weak sense. Here  $K$  and  $M$  denote the Gauss and the mean curvature of  $\Sigma$ , respectively. In my talk the norm resolvent convergence, that implies also convergence of the respective eigenvalues and eigenfunctions, will be proved. Moreover we will consider a general configuration in  $\mathbb{R}^n$ ,  $n \geq 2$ , including a general magnetic field. The talk is based on a joint work with David Krejčířík and Nicolas Raymond.