# ADIABATIC PATHS AND PSEUDOHOLOMORPHIC CURVES

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We consider a correspondence, proposed by Taubes, between solutions of the Seiberg–Witten equations on a compact 4-dimensional symplectic manifold and pseudoholomorphic curves on this manifold. The Taubes correspondence is established via a certain limiting procedure, called the scaling limit. There exists a non-trivial 3-dimensional analogue of this procedure in which the role of Seiberg–Witten equations is played by the Ginzburg–Landau equations and the scaling limit is replaced by the adiabatic limit, involving the introduction of the "slow" time. The adiabatic limit construction establishes a correspondence between solutions of Ginzburg–Landau equations and certain adiabatic paths in the moduli space of static solutions. The Taubes correspondence can be considered from this point of view as a complex analogue of the adiabatic limit construction in which pseudoholomorphic curves play the role of complex adiabatic paths.

The work on this subject started when I first visited the Erwin Schrödinger Institute in 1999. In my talk I present a summary of what was done during past years in this direction.

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