STUDENT WORKSHOP SZCZECIN 2019

**Speaker:** Arnold Kowalski (University of Szczecin)

**Title:** *Weierstrass representation for minimal surfaces*

**Abstract:** Surfaces that locally minimize area have been extensively used to model physical phenomena, including soap films, black holes, compound polymers, protein folding, etc. The mathematical field dates to the 1740s but has recently become an area of intense mathematical and scientific study, specifically in the areas of molecular engineering, materials science, and nanotechnology because of their many anticipated applications. The main goal of this talk is to present connection between theory of minimal surfaces and complex analysiss. This connection was discovered by Karl Weierstrss and is known as "Weierstrass representation fo minimal surfaces". This theorem provides us with a simple way to construct many examples of minimal surfaces using functions from complex analysis and allows to obtain great further results in complex analysis.