

INOLEC COURSE ANNOUNCEMENT — Fall, 2017

COMPLEX HYPERBOLIC MANIFOLDS

Monday 12am and Thursday 2pm
Main meeting room, 25 September through 12 October

Instructor:

Boris Apanasov

Textbook:

”Complex Hyperbolic Geometry” by W. Goldman (Oxford Univ Press, 1999). Some Lecture Notes will be available from the instructor; any book on real hyperbolic geometry may be useful.

Prerequisite:

Working knowledge of real and complex analysis, and differential geometry.

The course will be an exploration of complex hyperbolic geometry from many points of view and with respect to its connections to various fields such as complex analysis, Riemannian geometry (especially geometry of negatively curved spaces), symplectic and contact geometry, Lie groups a.o. The complex hyperbolic geometry unites the above fields all together and provides highly perspective and diverse directions for research. Now it attracts curiosity of researchers from many different branches of mathematics and theoretical physics. So it is very good for young mathematicians to get some knowledge of complex geometry in order to get interesting research problems in algebra, geometry (geometric structures on manifolds), topology, theory of representations, modern analysis (real, harmonic, complex, non-linear and , generally, geometric one).

To encourage student participation, some times the class will be conducted as a seminar. Some problems formulated and discussed in class may serve as a basis for study toward student’s Master or Ph.D. degree.