THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Kashiwara conjugation for twisted *D*-modules

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Abstract

In 1987, Kashiwara introduced a functor taking *D*-modules on a complex manifold *X* to *D*-modules on the complex conjugate of *X*. Moreover, he showed that this functor, which is called Kashiwara conjugation, is an (anti)-equivalence from the category of regular holonomic *D*-modules on *X* to those on the complex conjugate of *X*. Motivated by applications to representation theory, Barlet and Kashiwara extended this functor to modules over rings of twisted differential on generalized flag varieties. I will explain a simple way to extend the Barlet-Kashiwara result to more general rings of twisted differential operators on arbitrary complex manifolds. As some of my motivation for thinking about this comes from conjectures of Schmid and Vilonen on representation theory, I will also give some examples coming out of those conjectures.

Date: January 19, 2015 (Monday)

Time: 4:00 – 5:00pm

Place: Room 210, Run Run Shaw Bldg., HKU

All are welcome