

The UIC Algebraic Geometry Seminar

ON THE CANONICAL EXTENSION OF A LOCAL SYSTEM

CHRISTIAN SCHNELL

Ohio State University

In any family of projective varieties, the integral cohomology groups of the smooth fibers form a local system over the base B . In general, this local system is defined only over an open subset of B , because some fibers may be singular, and its behavior near the “boundary” contains information about the original family.

Associated to the local system, there is also a vector bundle with a flat connection. In 1970, Deligne showed in a more general setting how to construct a “canonical extension” for this type of bundle, using the monodromy of the local system, and his construction has since played a role in Hodge theory. In the talk, we answer the natural question of what happens to the local system itself at the boundary.

SEO 636

Thursday, October 11th

4:00 p.m.

<http://www.math.uic.edu/~coskun/f2007alggeom.html>