Harvard-M.I.T.
Algebraic Geometry Seminar

Bert van Geemen (Pavia)

will speak on

HALF TWISTS OF HODGE STRUCTURES WITH CM

Abstract: Let $V$ be a weight $n$ Hodge structure of CM-type. Under certain circumstances we can define a Hodge structure $V_{1/2}$, of weight $n - 1$, the half twist of $V$. In case $V$ has weight two, is of K3 type and has CM by an imaginary quadratic field, we show that $V_{1/2}$ is a summand of the Kuga-Satake Hodge structure of $V$. We apply these results to certain K3 surfaces and to certain cubic 4-folds. Using results of Shioda we obtain a geometrical realization of the Kuga-Satake correspondence in various cases.

Tuesday, April 18, 3:00 p.m.
Harvard Room 507

The seminar webpage is http://www-math.mit.edu/~vakil/seminar.html.