



Du
13
JAN.
2023

16h30
-
18h00

ÉQUATIONS DIFFÉRENTIELLES MOTIVIQUES ET AU-DELÀ

Generalized cross-ratios, functions on Hilbert schemes, and Abel's problem

L'Institut Poincaré
314

INSCRIPTION

Suppose $Y=Y_1-Y_2$ and $Z=Z_1-Z_2$ are algebraic cycles with Y of codim. r and Z of dim. $r-1$ on a smooth, projective variety P of dimension n over the complex numbers. We assume Y and Z are homologous to 0 and the supports of Y and Z are disjoint. The method of Hain yields a biextension which is a mixed Hodge structure with weight graded pieces $Q(1)$, $H^{2r-1}(P, \mathbb{Q}(r))$, and $Q(0)$. We study the degenerate case when $H^{2r-1}(P, \mathbb{Q}(r)) = (0)$. The resulting extension of $Q(0)$ by $Q(1)$ (Kummer extension) yields an invariant in $\mathbb{C}^\times$. In the simplest case $P=\mathbb{P}^1$ and Y, Z given by differences of points, this invariant is the cross-ratio. In general it is difficult to calculate. Working with families of cycles yields solutions to a classical problem of Abel and also to rational functions on Hilbert schemes



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HORAIRES

L'institut :

- lundi au vendredi de 8h30 à 18h,
- fermé les jours fériés.

Le musée - Maison Poincaré :

- lundi, mardi, jeudi et vendredi de 9h30 à 17h30,
- samedi de 10h à 18h,
- fermé le mercredi et le dimanche.