ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

4. Algebraic Geometry

1991 MS Classification: 14 Algebraic geometry

Conte, Alberto, Universitá di Torino, Italia

On the unirationality of quartic hypersurfaces

It is well known that the general quartic hypersurface $V_{r-1}(4) \subseteq \mathbf{P}^r$, defined over any field k, is unirational for $r \geq 6$. This follows, for $r \geq 7$, from a general result of C. Ciliberto, whilst, for $r = 6$, a direct proof was given by U. Morin. We show how a much simpler proof than Morin's can be given using a theorem of B. Segre and give hints on how one could possibly attack the open cases $r = 4, 5$. In particular, we show that quartic fourfolds containing a plane (or a Hirzebruch surface F_n) are unirational. These results are joint work with J. P. Murre and A. Verra.