

Ran, Ziv

Families of plane curves and their limits: Enriques' conjecture and beyond. (English)

Zbl 0704.14018

Ann. Math. (2) 130, No. 1, 121-157 (1989).

The author proves the irreducibility of the family of all plane curves of given degree with a prescribed number of nodes and a further singular point of a special type (quasi-ordinary singularity). This result generalizes the irreducibility of Severi varieties [*J. Harris*, Invent. Math. 84, 445-461 (1986; Zbl 0596.14017)] and answers in particular a conjecture of Enriques. The proof uses a special type of reducible surfaces (fans) whose components are blowing ups of projective planes. Fans were already used by the author in his own proof of the irreducibility of Severi varieties [Invent. Math. 86, 529-534 (1986; Zbl 0644.14009)]. Most of the paper is devoted to developing a degeneration theory for fans and families of curves on fans: such theory is the main tool for the proof and should have many other applications.

Reviewer: [E.Casas-Alvero](#)

MSC:

[14H10](#) Families, moduli of curves (algebraic)

[14M15](#) Grassmannians, Schubert varieties, flag manifolds

Cited in **3** Reviews

Cited in **8** Documents

Keywords:

irreducibility of the family of all plane curves of given degree; nodes; quasi-ordinary singularity; Severi varieties; fans

Full Text: [DOI](#)