Colley, Susan Jane; **Kennedy, Gary**

Triple and quadruple contact of plane curves. (English) Zbl 0760.14022

Enumerative algebraic geometry, Proc. Zeuthen Symp., Copenhagen/Den. 1989, Contemp. Math. 123, 31-59 (1991).

[For the entire collection see Zbl 0741.00067.]

A tower of $\mathbf{P}^1$-bundles first introduced by *J. G. Semple* [Proc. London Math. Soc., III Ser. 4, 24-49 (1954; 55, 145)], is used to treat enumerative problems concerning triple and quadruple contact between members of two families of plane curves. In the case of triple contact, the authors recover classical formulas of *H. Schubert* [Math. Ann. 17, 154-212 (1880)]and *H. Zeuthen* [C. R. Acad. Sci. Paris 89, 946-948 (1879)]. They also prove two new quadruple contact formulas. The formulas themselves are established by formal calculations in the intersection ring of the relevant Semple bundle. The scope of their validity involves a determination of the orbits of the bundle under the action of the projective general linear group.

Reviewer: S.J.Colley (Oberlin)

MSC:

14N10 Enumerative problems (combinatorial problems) in algebraic geometry
14H10 Families, moduli of curves (algebraic)
14L30 Group actions on varieties or schemes (quotients)

Cited in **6** Documents

Keywords:

triple contact; families of plane curves; quadruple contact formulas; intersection ring