

**Goodman, Jacob E.; Pollack, Richard; Wenger, Rephael; Zamfirescu, Tudor**  
**Arrangements and topological planes.** (English) [Zbl 0827.51003](#)  
*Am. Math. Mon.* 101, No. 9, 866-878 (1994).

The subject of this highly readable paper is the following. Suppose you are given a set of curves in the real projective plane. When can these curves be viewed as lines of a topological projective plane? A topological projective plane is a projective plane where point space and line space are topological spaces such that joining two points and intersecting two lines are continuous operations. The main results state that any given arrangement of curves that fulfill some rather obvious conditions can be embedded in a topological projective plane. Moreover, all such arrangements can be embedded in just one plane. This universal plane is however not unique.

The paper starts with an excellent introduction to the subject as a whole and to the problems to be solved in particular. This introduction is such that even people not acquainted with the subject (such as I), have no difficulties to read the paper. Albeit the results are surprising, the proofs are short and almost elementary using only basic results of topology.

Reviewer: [A.Schroth \(Braunschweig\)](#)

**MSC:**

**51A20** Configuration theorems in linear incidence geometry  
**51H10** Topological linear incidence structures  
**51A35** Non-Desarguesian affine and projective planes

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