

Meeting: 1006, Lubbock, Texas, SS 6A, Special Session on Real Algebraic Geometry

1006-14-195 **Anatoly B. Korchagin*** (korchag@math.ttu.edu), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042. *On arrangements of a plane quintic M -curve with respect to a pair of lines.* Preliminary report.

We discuss an improvement of the classification of arrangements of a quintic M -curve with respect to a pair of lines, which satisfy the following conditions: each line has five real distinct points of intersection with the odd branch of the M -curve. These points of intersection divide the odd branch of the quintic M -curve into ten segments. Every such a segment connects either two points of the same line or two points of distinct lines. One can check that the number s of segments, which connect points of distinct lines, can be either 2, 4, 6, or 8. In our joint paper with Polotovskii, we proved that *if $s = 2$, then there exist only 20 arrangements of quintic M -curve with respect to a pair of lines, which realize in the projective plane distinct topological types of such arrangements.* We discuss the improvement in the case when $s = 4$, which we got in our joint work with Polotovskii. (Received February 14, 2005)