

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

1006-14-213 **Lina M. Williams*** (lalvarez@math.ttu.edu), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042, and **Anatoly B. Korchagin** (korchag@math.ttu.edu), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042. *The classification of M-curves of bidegree $(d, 3)$ with $d \geq 2$ on the torus.* Preliminary report.

We prove the following theorem.

Theorem. *For every integer $d \geq 2$, there exist M-curves of bidegree $(d, 3)$ on the torus $\mathbb{R}P^1 \times \mathbb{R}P^1$, which realize the schemes $\langle 2(d-1) \coprod (a+nb) \rangle$. The symbol $2(d-1)$ represents $2(d-1)$ connected components of an M-curve, which realize zero homological class of $H_1(\mathbb{R}P^1 \times \mathbb{R}P^1)$. The symbol $a+nb$ represents the connected component of an M-curve, which realizes homological class $a+nb$ of $H_1(\mathbb{R}P^1 \times \mathbb{R}P^1)$ with generators a and b , and $n \equiv d \pmod{2}$ and $n \leq d$. (Received February 15, 2005)*