Abstract

We describe the structure of the group of algebraic automorphisms of the following surfaces 1) \( \mathbb{P}^1_k \times \mathbb{P}^1_k \) minus a diagonal; 2) \( \mathbb{P}^1_k \times \mathbb{P}^1_k \) minus a fiber. The motivation is to get a new proof of two theorems proven respectively by L. Makar-Limanov and H. Nagao. We also discuss the structure of the semi-group of polynomial proper maps from \( \mathbb{C}^2 \) to \( \mathbb{C}^2 \).