Centralizers of elements of infinite order in plane Cremona groups

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Abstract. Let $\mathbf{K}$ be an algebraically closed field. The Cremona group $\mathrm{Cr}_2(\mathbf{K})$ is the group of birational transformations of the projective plane $\mathbb{P}^2_{\mathbf{K}}$. We carry out an overall study of centralizers of elements of infinite order in $\mathrm{Cr}_2(\mathbf{K})$ which leads to a classification of embeddings of $\mathbf{Z}^2$ into $\mathrm{Cr}_2(\mathbf{K})$, as well as a classification of maximal non-torsion Abelian subgroups of $\mathrm{Cr}_2(\mathbf{K})$ when $\mathrm{char}(\mathbf{K}) = 0$.

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