Some remarks on essentially minimal clones

Hajime Machida
Tokyo, Japan
(Joint work with I. G. Rosenberg)

For a non-empty set $A$, a clone $C$ on $A$ is essentially minimal if $C$ is minimal among all clones on $A$ containing essential functions and is not a minimal clone. For a finite $A$ with $|A| = k (\geq 2)$, we show that the minimum arity of generators of $C$ is no greater than $k$ for any essentially minimal clone $C$ on $A$. We also discuss some properties of essentially minimal groupoids on a three-element set and determine their conjugate classes. There are 16 conjugate classes.