

**On Stabilization of  $E_k$  Envelopes**  
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$E_k$  envelopes were constructed in order to find definable nilpotent subgroups which contain the nilpotent subgroup, by considering the fact that a double centralizer of a subgroup contains this subgroup. A natural question about  $E_k$  definable envelopes is stabilization problem. It is about the decreasing sequence of  $E_k$  envelopes stop after a specific point. In this talk after giving some group classes have affirmative answer for stabilization problem, I will give the details of an example which shows that  $E_k$  envelopes do not stabilize in general.