New bounds for 3-part Sperner-families

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We give a new upper and lower bound on the size of maximum 3-part Sperner families. We prove that $1,05 < d_3 < 1,072$. Further we disprove a conjecture of Aydinian, Czabarka, Erdős, Székely on the maximum size of k-part Sperner families for the case of equal parts of size $2^{\ell} - 1$.