999-08-135 **Kira Adaricheva*** (`kadaricheva@ccc.edu`), Harold Washington College, 30 East Lake St., Chicago, IL 60601, and **Agata Pilitowska**, Warsaw University of Technology. *Complex Algebras of Subalgebras.* Preliminary report.

The complex algebra of subsets of an algebra G is the algebra of the same type defined on the set of all non-empty subsets of the carrier of G. When we consider only non-void subalgebras of G we obtain the notion of the complex algebra SG of subalgebras. Evidently, the complex algebra of subalgebras is not always defined for an arbitrary algebra G.

We describe the necessary and sufficient condition, called *the complex condition*, for a variety V to ensure that the complex algebra of subalgebras is defined for any algebra from V.

G.Grätzer and H.Lakser proved that the variety $VUS(G)$ generated by all algebras of subsets for the algebras from $V(G)$ coincides with $V(G)$ iff G is defined by linear identities.

Now assume that the complex condition holds in $V(G)$, thus the variety $VS(G)$ generated by complex algebras of subalgebras of algebras from $V(G)$ is defined. The question, whether $VS(G) = V(G)$ implies that G is defined by linear or idempotent identities, is still open. We show that the premise of this conjecture cannot be replaced with the weaker condition that SG is defined and $V(SG) = V(G)$.

We also investigate the suprising conjecture that the complex condition might be equivalent to the entropic law. (Received August 19, 2004)