Lie ideals in algebra and analysis

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A linear subspace L of an algebra A is called a Lie ideal of A if $al - la \in L$ for all $l \in L$, $a \in A$. Lie ideals naturally appear in various topics in algebra and analysis, and we will briefly review some of them. At the end we will indicate their meaning in the problem of describing values of a noncommutative polynomial on an algebra. The latter is based on a joint work with I. Klep.