Closures of sums of squares in various convex topologies

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We consider the cone $\sum \mathbb{R}[\underline{x}]2$ of sums of squares in the polynomial ring $\mathbb{R}[\underline{x}] := \mathbb{R}[x_1, \cdots, x_n]$. We describe its closure in the various locally convex topologies on $\mathbb{R}[\underline{x}]$, such as the $\| \cdot \|_p$ and weighted l_p norm topologies for $1 \leq p \leq \infty$. This talk is based on joint work with M. Ghasemi and E. Samei.