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**Mihai Putinar\*** ([mputinar@math.ucsb.edu](mailto:mputinar@math.ucsb.edu)), Mathematics Department, UCSB, Santa Barbara, CA 93106. *Positivstellensatze in the free-<sup>\*</sup> context.*

A survey of the known decomposition results for positive elements of a free-<sup>\*</sup> algebra (with supports) will be given. Examples and application to optimization will complement the theoretical results. (Received February 23, 2010)