Rings $M$ of operators in Hilbert space are considered here. A property is purely algebraic if it can be expressed within $M$ in terms of the algebraic operations, that is, $\alpha A$, $A + B$, $AB$, $A^*$ and 1 (the identity). The author establishes the algebraic character of the $(\alpha)$ definiteness of $A$ (essentially $A = BB^*$), $(\beta)$ bound of $A$ (defined in terms of definiteness), $(\gamma)$ strong convergence of $A_n$ to $A$ and $(\delta)$ weak convergence of $A_n$ to $A$.

The proof of $(\gamma)$ is based on the existence of subsequences of $A_n$ which are $\Sigma$-sequences; the definition of $\Sigma$-sequences brands them as purely algebraic. The proof of $(\delta)$ depends on $(\gamma)$ and on the fact that weak convergence may be characterized by means of strong convergence.

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