Quantum correlations are based on the non-separability of the total system’s statistical operator. The notion of non-separability, on the other hand, is given with respect to the precise meaning of separability only. So it is a crucial task to define separability in terms of statistical operators. A recently proposed approach offers several advantages with respect to the usual definition. The von Neumann entropy $S$ allows to develop a measure $I_{a/b}$ of the relative non-separability of an operator $\rho_a$ with respect to another operator $\rho_b$. This is a system immanent quantity of any property type as, e.g., spin or polarization. We compare the effect of the different approaches on $S$ and $I_{a/b}$.

Finally, the applicability of a common separability criterion will be checked.

Key words: Statistical Operators; von Neumann Entropy; Separability.