We now give several equivalent definitions of this concept. The one we begin with is different from that given originally in 1942 (cf. refs. 3a and 3d); it is most useful when we wish to make systematic use of currents and distributions.

Definition 1. A function V defined on a domain D of $\mathbb{C}^n$ is said to be plurisubharmonic if:

1a) It is real-valued, $-\infty \leq V \leq \infty$, and locally integrable, i.e., its integral over each open relatively compact subset of D is finite.

1b) The distribution $T(V, \vec{\lambda})$ depending on the vector $\vec{\lambda} = (\lambda_1, \lambda_2, \cdots \lambda_n)$ given by

$$T(V, \vec{\lambda}) = \sum_{p,q} \frac{\partial^2 V}{\partial z_p \partial \bar{z}_q} \lambda_p \bar{\lambda}_q \tag{5}$$

is positive distribution (hence a positive measure) for each vector $\vec{\lambda}$.

By P2, Definition: A linear operator $l(\phi)$ is said to be positive if $l(\phi) \geq 0$ for $\phi \geq 0$.

Proposition 1. A positive linear operator $l(\phi)$ on a dense vector subspace L of $\mathcal{D}^0(G)$ can be identified with a positive measure if we suppose that, for each compact set K, there is a positive function in L which is an upper bound for the characteristic function of K.