1114-81-229 **David Carfi** (davidcarfi@gmail.con) and **Dania Panuccio*** (dania.panuccio@gmail.com).
Spectral expansion of Schwartz linear operators.

In this paper, we prove and apply a theorem of spectral expansion for Schwartz linear operators which have a Schwartz linearly independent eigenfamily. This type of spectral expansion is the analogous of the spectral expansion for self-adjoint operators of separable Hilbert spaces, but in the case of eigenfamilies of vectors indexed by the real Euclidean spaces. The theorem appears formally identical to the spectral expansion in the finite dimensional case, but for the presence of continuous superpositions instead of finite sums. The Schwartz expansion we present is one possible rigorous and simply manageable mathematical model for the spectral expansions used frequently in Quantum Mechanics, since it appears in a form extremely similar to the current formulations in Physics. (Received August 28, 2015)