

**Meeting:** 1002, Pittsburgh, Pennsylvania, SS 11A, Special Session on Mathematical Finance

1002-60-96            **Vladimir Vinogradov\*** (vlavin@math.ohiou.edu), Department of Mathematics, 321 Morton Hall, Ohio University, Athens, OH 45701. *On a Representation for a Class of Self-financing Portfolios of Securities which Contain Equities Driven by Certain Geometric Lévy Processes.*

We consider a self-financing portfolio comprised of one bond and  $k$  equities. Suppose that the logarithmic returns on all  $k$  equities belong to a specific class of Lévy processes, which are related to the power-variance family. We demonstrate that for a particular choice of constant portfolio weights, the combined movement of  $k$  equities is governed by a geometric Lévy process, which is related to the same power-variance family. The selection of constant portfolio weights coincides with those of fund managers. Although simpler, in the discontinuous case this approach is less profitable, than portfolio weight selection using an approach that maximizes the expected logarithmic utility as in Kallsen (2000). We also present a converse of our representation theorem and discuss its implications in the continuous case. (Received September 07, 2004)