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**Leon C Hardy\*** (lhardy3@atlas.valenciacc.edu), 1800 South Kirkman Road, Faculty of Science, Orlando, FL 32811. *On the relationship between the Hausdorff dimension and the integration order.*

We use the Grünwald definition for the integration of the function  $f : [0, 1] \rightarrow \mathbb{R}$  to construct an iterated function system on the interval  $[0, 1]$ . Then we show that this iterated function system satisfies the open set condition. Using this construction, we further show that the Hausdorff dimension is intimately related to the order of the fractional integration process for any real order  $q > 0$ . (Received September 01, 2007)