Random Integral Representations: THE CONJECTURE

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In my article in *THE ANNALS OF PROBABILITY*, vol. **13**, No 2, 1985, on page 607, I had stated the following conjecture:

Each class of limit distributions, derived from sequences of independent random variables, is the image of some subset of ID by some mapping defined as a random integral.

[It was repeated in *PROBABILITY THEORY AND RELATED FIELDS*, vol. **78**, 1988, page 474.]

Although I have no formal proof of that general claim such representations were found for many specific classes of laws. Furthermore, twenty years later I may "specify" that the representations in question might be of the form

$$\mathcal{L}(\int_A h(t)\, dY(r(t))), \tag{1}$$

where A is a subset of the real (positive) line, $Y(\cdot)$ is a Lévy process (possibly with some moments restrictions) and h, r are some deterministic functions and the later one as an "inner time change" must be monotonic. [$\mathcal{L}(\cdot)$ denotes the probability distribution of a random variable (here it is given as a random integral).]

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