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**Christoph Bandt\*** ([bandt@uni-greifswald.de](mailto:bandt@uni-greifswald.de)), Mathematik, Anrdt-Universität, 17487 Greifswald, Germany. *The two-dimensional density of Bernoulli convolutions.*

By a theorem of Solomyak, the family of all Bernoulli convolutions with  $1 < \beta < 2$  can be considered as an  $L_2$  function of two parameters. We analyse and visualize the case  $\beta > 1.618$ . For parameters outside the overlap region there is a conjugacy with the doubling map which subsumes results by Erdős, Joo, Komornik, Sidorov, de Vries, Jordan, Shmerkin and Solomyak on points with unique addresses. Landmark points inside the overlap region are determined by the coincidence of two finite orbits. Their parameters are algebraic integers. There exist Perron numbers which are neither Pisot nor Salem and for which the Bernoulli convolution has no bounded density, and even non-trivial multifractal spectrum. A series representation for the two-dimensional density is provided. (Received February 01, 2016)