Interpreting Quantum Randomness

Announcing digital release of interdisciplinary research project uniting quantum randomness and music

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Randomness has attracted great interest in the field of music composition for quite some time, however, in most cases, the source of randomness used has been in fact deterministic in nature. That is to say, the random numbers employed by musicians have been imperfect in the strict sense. Moreover, the method in which they produced such randomness was extrinsic to the method in which randomness was applied.

Interpreting Quantum Randomness is an interdisciplinary research project led by composer and sound artist Dr Reiko Yamada and ICREA Prof Dr Maciej Lewenstein, leader of the Quantum Optics Theory group at ICFO. This unusual collaboration stems from their common interest in quantum randomness, an area in which Lewenstein is a world renown expert. Together with ICFO researchers Drs Samuele Grandi, Albert Aloy, Luca Barbiero, Gorka Munoz-Gil and Antoine Reserbat-Plantey, they held countless conversations on this topic and other key concepts in quantum physics, culminating in the conceptualization of a project in which they attempt to directly produce sound events from the genuine quantum true

randomness of quantum physical systems. Through this method, they aim at achieving a new sense of aesthetic effect in music which derives from the true randomness that prevails in the natural quantum world.

? With methods that combine digital and analog tools, Yamada has created a series of sou d gestures and graphic notations for improvisational musicians (Barbara Held, Artur Majewsk , Ilona Schneider, Basque Trilla). Two composer-performers, Andres Lewin-Richter and Ang l Faraldo, were also commissioned to develop their own musical performances based n quantum noise dat

. This work has recently been released in digital format by Phonos Netlabel, recorded t Phonos, on October 27 and 28, 2021, with the support of ICFO. It was presented live at the l ??+ Music Festival organized by Sonar at the CCCB in Barcelona on October 28, 2021. Limit d copies of this this edition will be released on vinyl in the near future.