# Visualizing Quantum States

Yutaka Shikano[1, 2, *]

[1] *Research Center for Advanced Science and Technology (RCAST), The University of Tokyo, Meguro-ku, Tokyo, 153-8904, Japan*
[2] *Institute for Quantum Studies, Chapman University, Orange, CA 92866, USA*

When we estimate a quantum state, we normally use the quantum state tomography. However, this needs the post-information processing. Here, we propose a new idea on visualizing technique of the quantum state. Under the specific configuration, in which the optical vortex beam is used, we experimentally demonstrate the visualization of the specific two-dimensional quantum state; the polarized state of light by the weak measurement initiated by Yakir Aharonov and his colleagues [1–3]. The entangled state can be also visualized via the concurrence as the extension of this idea [4]. This work is collaborated with Hirokazu Kobayashi (Kochi University of Technology), Mikko Tukiainen (University of Turku), and Sristy Agrawal (Indian Institute of Science Education and Research, Kolkata).

Keywords: Weak measurement, quantum measurement

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* yshikano@qc.rcast.u-tokyo.ac.jp