

QUANTUM KEY DISTRIBUTION METHOD, APARATUS AND SYSTEM

ABSTRACT

5 Embodiments of the present invention provide a method, an apparatus
and a system for quantum key distribution. The participants of the quantum
key distribution include a first party and a second party. The method
comprises: the first party preparing a coherent pulse having a first optical
intensity and a first phase, and transmitting the coherent pulse to the second
10 party, wherein the first phase is determined according to a first random value
and a first key bit; the second party preparing a local oscillator pulse having
a second optical intensity and a second phase, and inputting the coherent
pulse and the local oscillator pulse into a coherent detection module to obtain
a measurement result, wherein the second phase is determined according to
15 a second random value; the second party comparing the measurement result
with a first threshold preset by the first party and the second party; if the
measurement result satisfies a preset relation with the first threshold,
determining a second key bit corresponding to the first key bit at the second
party, and releasing the second random value to the first party; and the first
20 party determining whether to flip the first key bit based on the first random
value and the second random value.

(Figure 3)