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Recent progress of drone-based quantum network

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We have been focusing on quantum optical integration during the past years. The integrated quantum optical devices can be loaded on drones for the future mobile quantum network construction. Such drone-based mobile quantum network is flexible, reconfigurable and cost-effective, to realize full-time all-location coverage. We demonstrate first entangled photon pair distribution between drone and ground stations, and this experiment can be performed in daytime, clear and rainy nights. We further extend this drone-based quantum link to two drones, and realize the first optical-relayed entanglement distribution. Quantum key distribution has also been performed using a drone, with secure key rate of 8.48kHz. Together with high data rate optical communication, a drone-based mobile optical communication network can be expected, combining both the classical and quantum technologies.

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