PROBABILITY AND MATHEMATICAL STATISTICS Vol. 34, Fasc. 2 (2014), pp. 199–214

## ON DUAL GENERATORS FOR NON-LOCAL SEMI-DIRICHLET FORMS

## **Toshihiro Uemura**

Abstract: Let k(x, y) be a measurable function defined on  $E \times E$  off the diagonal, where E is a locally compact separable metric space, and let m be a positive Radon measure on E with full support. In 2012, we showed that a quadratic form having kas a Lévy kernel becomes a lower bounded semi-Dirichlet form on  $L^2(E;m)$  which is non-local and regular. Then there associates a Hunt process corresponding to the semi-Dirichlet form. In the case where  $E = \mathbb{R}^d$ , we will show that the dual form of the semi-Dirichlet form also produces a Hunt process by taking a killing. As a byproduct, a precise description of the infinitesimal generator of the dual form is also given.

**2000 AMS Mathematics Subject Classification:** Primary: 31C25; Secondary: 60J75, 47G20.

Keywords and phrases: Semi-Dirichlet form, non-local operator, stable-like process.

THE FULL TEXT IS AVAILABLE HERE