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Intersection local times for interlacements. (English) Zbl 1307.60104
Stochastic Processes Appl. 124, No. 5, 1849-1880 (2014).

Summary: We define renormalized intersection local times for random interlacements of Lévy processes in \mathbb{R}^d and prove an isomorphism theorem relating renormalized intersection local times with associated Wick polynomials.

MSC:

60J55 Local time and additive functionals
60G51 Processes with independent increments; Lévy processes
60J40 Right processes
60G55 Point processes (e.g., Poisson, Cox, Hawkes processes)

Cited in 1 Document

Keywords:

intersection local times; Lévy processes; interlacements

Full Text: [DOI](#) [arXiv](#)

References:

- [1] Arcones, M.; Giné, E., On decoupling, series expansion, and tail behavior of chaos processes, J. Theoret. Probab., 6, 101-122, (1993) · [Zbl 0785.60023](#)
- [2] Bass, R. F.; Khoshnevisan, D., Intersection local times and Tanaka formulas, Ann. Inst. H. Poincaré, 29, 419-451, (1993) · [Zbl 0798.60072](#)
- [3] Bass, R. F.; Rosen, J., An almost sure invariance principle for the range of planar random walks, Ann. Probab., 33, 1856-1887, (2005) · [Zbl 1085.60018](#)
- [4] Dellacherie, C.; Maisonneuve, B.; Meyer, P.-A., Probabilities et potentiel, (1992), Hermann Paris, Chapitres XVII a XXIV
- [5] Dynkin, E. B., Regularized self-intersection local times of planar Brownian motion, Ann. Probab., 16, 58-74, (1988) · [Zbl 0641.60085](#)
- [6] Eisenbaum, N.; Kaspi, H.; Marcus, M.; Rosen, J.; Shi, Zhan, A ray-knight theorem for symmetric Markov processes, Ann. Probab., 28, 1781-1796, (2000) · [Zbl 1044.60064](#)
- [7] Gradshteyn, I.; Ryzhik, I., Table of integrals, series and products, (1980), Academic Press Oxford · [Zbl 0521.33001](#)
- [8] Kingman, J. F.C., (Poisson Processes, Oxford Studies in Probability, (2002), Clarendon Press Oxford)
- [9] Le Gall, J.-F., Propriétés d'intersection des marches aléatoires, I. convergence vers le temps local d'intersection, Comm. Math. Phys., 104, 471-507, (1986) · [Zbl 0609.60078](#)
- [10] Le Gall, J.-F., Wiener sausage and self intersection local times, J. Funct. Anal., 88, 299-341, (1990) · [Zbl 0697.60081](#)
- [11] Le Jan, Y.; Marcus, M. B.; Rosen, J., Intersection local times, loop soups and permanental Wick powers · [Zbl 1368.60080](#)
- [12] Marcus, M. B.; Rosen, J., Gaussian chaos and sample path properties of additive functionals of symmetric Markov processes, Ann. Probab., 24, 1130-1177, (1996) · [Zbl 0862.60065](#)
- [13] Marcus, M. B.; Rosen, J., Renormalized self-intersection local times and Wick power chaos processes, Mem. Amer. Math. Soc., 675, (1999) · [Zbl 1230.60005](#)
- [14] Marcus, M. B.; Rosen, J., Markov processes, Gaussian processes and local times, (2006), Cambridge University Press New York · [Zbl 1129.60002](#)
- [15] Rosen, J., Joint continuity of renormalized intersection local times, Ann. Inst. H. Poincaré, 32, 671-700, (1996) · [Zbl 0867.60049](#)
- [16] Rosen, J., Joint continuity and a Doob-Meyer type decomposition for renormalized intersection local times, Ann. Inst. H. Poincaré, 35, 143-176, (1999) · [Zbl 0922.60072](#)
- [17] Sznitman, A.-S., An isomorphism theorem for random interlacements, Electron. Comm. Probab., 17, 9, 1-9, (2012) · [Zbl 1247.60135](#)
- [18] Sznitman, A.-S., Topics in occupation times and Gaussian free fields, (Zurich Lectures in Advanced Mathematics, (2012), EMS Zurich) · [Zbl 1246.60003](#)
- [19] A.-S. Sznitman, On scaling limits and Brownian interlacements. · [Zbl 1303.60022](#)
- [20] Varadhan, S. R.S., Appendix to Euclidean quantum field theory by K. symanzyk, (Jost, R., Local Quantum Theory, (1969),

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