Dirichlet Forms for Poisson Measures and Lévy Processes: The Lent Particle Method

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We present a new approach to Malliavin calculus on the Poisson space. The theoretical framework is that of local Dirichlet forms and more precisely the *(EID) property*: Energy Image Density property. The method gives rise to a new explicit calculus that we first show on some simple examples : it consists in adding a particle and taking it back after computing the gradient. This method permits to establish absolute continuity of Poisson functionals such as Levy areas, solutions of SDE's driven by Poisson measure...It also permits to develop a Malliavin calculus on the Poisson space.

$\hookrightarrow$ These talks are based on several joint works with N. Bouleau.

References

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