



Louis Bachelier Prize 2018

Citation for Pauline Barrieu

Pauline Barrieu's scientific contributions cover a wide range of topics spanning pricing, risk management and insurance with insightful papers that are motivated by the needs of the practical world while being skillfully crafted with elegant analysis that illuminates the underlying structure of the problem in question. Her paper with N. El Karoui on inf-convolution of risk measures is a major contribution to the study of risk-sharing in a realistic context where both parties can trade in the financial markets to partially hedge their risks. Anyone concerned with product design in the world of insurance would certainly do well to study this paper, which neatly combines and develops ideas from risk measures and optimization. A recent application concerns risk-sharing in a regulatory environment where agents may use different risk measures like Value-at-Risk and Expected Shortfall. She has obtained important results in the field of Insurance Linked Securities as well as in life insurance in general and longevity modelling in particular. With M. Fehr she analysed cap-and-trade schemes introduced in the EU in connection with emission targets from the realm of environmental science.

Recently, questions of model risk or model uncertainty are recognised as being of prime importance in finance and insurance. Pauline Barrieu is one of the early contributors to this field. She has also worked on Uncertainty Aversion and on Backward Stochastic Differential Equations.

As an actuary, Pauline Barrieu combines in a unique way actuarial/insurance competence with a deep understanding of and competence in mathematical finance. The depth of her scientific oeuvre is matched with a passionate drive to communicate research results in her field to a broader public.