

## **Bakry-Emery meet Villani**

**Fabrice Baudoin** (Purdue University, West Lafayette, USA)

*Abstract.* We study gradient bounds for solutions of degenerate Fokker-Planck equations on manifolds, including as a special case, the celebrated kinetic Fokker-Planck equation. Our method generalizes to hypoelliptic operators the Bakry-Emery's approach and allows to recover and strengthen hypocoercive estimates obtained by Villani.