

STRONG COMPLETENESS FOR A CLASS OF STOCHASTIC DIFFERENTIAL EQUATIONS WITH IRREGULAR COEFFICIENTS

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ABSTRACT. We prove the strong completeness for a class of non-degenerate SDEs, whose coefficients are not necessarily uniformly elliptic or locally Lipschitz continuous or bounded. Moreover for each $p > 0$ there is a positive number $T(p)$ such that for all $t < T(p)$, the solution flow $F_t(\cdot)$ for such SDE belongs to the Sobolev space $W_{loc}^{1,p}$. As an application a differential formula is also obtained. This talk is based on a joint work with Xue-Mei Li.