ON THE MAXIMAL OPERATOR OF AN ARBITRARY ORNSTEIN-UHLENBECK SEMIGROUP

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If Q is a real, symmetric and positive definite $n \times n$ matrix, and B a real $n \times n$ matrix whose eigenvalues have negative real parts, we consider the Ornstein–Uhlenbeck semigroup on $\mathbb{R}^n$ with covariance Q and drift matrix B. Our main result says that the associated maximal operator is of weak type $(1, 1)$ with respect to the invariant measure. This was known only under further assumptions on the semigroup, like normality. For large values of the time parameter, we also prove a refinement of the result, in the spirit of a conjecture due to Talagrand. This is joint work with V. Casarino and P. Ciatti.