

ELLIPTIC OPERATORS WITH UNBOUNDED COEFFICIENTS

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ABSTRACT. In recent years there have been substantial developments in the theory of second order elliptic operators with unbounded coefficients, see for example [1], [2], [3] and the references therein.

The main source of this presentation will be [2], we prove that the heat kernel k associated to the operator A satisfies

defined in the whole $\mathbb{R}^N$. This kind of operators arise as a model in many field of science, especially in stochastic analysis (Ornstein-Uhlenbeck operators), mathematical finance (Black-Scholes equation and Cox-Ingersoll-Ross model), in physics (in non-relativistic quantum mechanics the Schrödinger operator). In particular, we are interested in studying quantitative and qualitative properties in $L^p(\mathbb{R}^N)$, $1 < p < \infty$, of the elliptic operator $\mathcal{A}$ where $q(x) = (1 + |x|^\alpha)$, and $F(x) = b|x|^{\alpha-2}x$.

REFERENCES

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