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# Partial Gaussian bounds for degenerate differential operators II

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**Abstract.** Let $A = -\sum \partial_k \, c_{kl} \, \partial_l$ be a degenerate sectorial differential operator with complex bounded mesaurable coefficients. Let $\Omega \subset \mathbb{R}^d$ be open and suppose that $A$ is strongly elliptic on $\Omega$. Further, let $\chi \in C_{\rm b}^\infty(\mathbb{R}^d)$ be such that an $\varepsilon$-neighbourhood of $\operatorname{supp} \chi$ is contained in $\Omega$. Let $\nu \in (0,1]$ and suppose that the $c_{kl\,|\Omega} \in C^{0,\nu}(\Omega)$. Then we prove (Hölder) Gaussian kernel bounds for the kernel of the operator $u \mapsto \chi \, S_t(\chi \, u)$, where $S$ is the semigroup generated by $-A$. Moreover, if $\nu = 1$ and the coefficients are real, then we prove Gaussian bounds for the kernel of the operator $u \mapsto \chi \, S_t u$ and for the derivatives in the first variable. Finally we show boundedness on $L_p(\mathbb{R}^d)$ of restricted Riesz transforms.

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