

## Schrödinger-type operators with unbounded diffusion and potential terms

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**Abstract.** We prove that the realization  $A_p$  in  $L^p(\mathbb{R}^N)$ , for  $1 < p < \infty$ , of the Schrödinger-type operator  $A = (1 + |x|^\alpha)\Delta - |x|^\beta$  with domain  $D(A_p) = \{u \in W^{2,p}(\mathbb{R}^N) : Au \in L^p(\mathbb{R}^N)\}$  generates a strongly continuous analytic semigroup provided that  $N > 2$ ,  $\alpha > 2$  and  $\beta > \alpha - 2$ . Moreover this semigroup is consistent, irreducible, immediately compact and ultracontractive.

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