

Evolution of Open Systems and Dynamical Semigroups for Unbounded Generators

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We consider dynamical semigroups for unbounded Kossakowski-Lindblad-Davies generators corresponding to evolution of open systems. For this evolution we prove the existence of uniquely determined minimal trace-preserving strongly continuous dynamical semigroups on the space of states constructed by a regularisation à la Kato. We illustrate these results by a simplest example of the open quantum oscillator. The corresponding dual W^* -dynamical system is unital quasi-free and (completely) positive automorphism of the Weyl CCR-algebra.