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Dispersive effects for the Schrödinger equation on graphs

We consider the free Schrödinger equation on graphs with at least one infinite edge. We first describe explictly the kernel of the resolvent operator with an appropriate decomposition corresponding to the discrete spectrum and the continuous one. Then we give sufficient conditions that allow to apply the limit absorbation principle and deduce the resolvent of the identity. Then with an additional assumption and using van der Corput Lemma, the time decay estimates $L^1 \to L^\infty$ in $|t|^{-1/2}$ is proved.