1145-47-1052 **Matthew A Fury*** (maf44@psu.edu), Penn State Abington, 1600 Woodland Road, Abington, PA 19001. *Logarithmic approximation of ill-posed problems associated with generators of holomorphic semigroups.*

The backward heat equation, one of the most widely studied ill-posed problems, has been treated with several regularization methods including the quasi-reversibility method and numerical methods, especially in Hilbert space. In Banach space, one approach is by the theory of semigroups of linear operators as $-\Delta$ generates a holomorphic semigroup of angle $\pi/2$ on $L^p(\mathbb{R}^n)$, $1 < p < \infty$. In this case, we apply a logarithmic approximation introduced by Boussetila and Rebbani, and applied by Huang, in order to prove continuous dependence on modeling for the backward heat equation, and more generally for ill-posed problems associated with strongly elliptic differential operators of even order in Banach space. (Received September 18, 2018)