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Additive maps preserving semi-Fredholm operators with bounded ascent on $\mathcal{B}(\mathcal{X})$

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Abstract. Let $\mathcal{X}$ be an infinite-dimensional complex Banach space, and $\mathcal{B}(\mathcal{X})$ the algebra of all bounded linear operators on $\mathcal{X}$. In this paper, given any positive integer m, we characterize the surjective additive maps on $\mathcal{B}(\mathcal{X})$ that preserve semi-Fredholm operators with ascent non-greater than m in both directions, and describe completely the structure of these maps.

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