

**Title:** Additive local invertibility preservers

**Author(s):** M. Bendaoud, M. Jabbar and M. Sarih

Let  $\mathcal{L}(X)$  be the algebra of all bounded linear operators on a complex Banach space  $X$ , and for a nonzero vector  $x \in X$  and  $T \in \mathcal{L}(X)$ , let  $\sigma_T(x)$  denote the local spectrum of  $T$  at  $x$ . We characterize additive surjective maps  $\phi$  on  $\mathcal{L}(X)$  which satisfy  $0 \in \sigma_{\phi(T)}(x)$  if and only if  $0 \in \sigma_T(x)$  for every  $x \in X$  and  $T \in \mathcal{L}(X)$ . Extensions of this result to the case of different Banach spaces are also established. As application, additive maps from  $\mathcal{L}(X)$  onto itself that preserve the inner local spectral radius zero of operators are classified.

**Address:**

M. Bendaoud  
Department of Mathematics  
Moulay Ismail University, ENSAM  
Marjane II, B.P. 15290  
Al Mansour, Meknès  
Morocco

**Address:**

M. Jabbar  
Department of Mathematics  
Moulay Ismail University, ENSAM  
Marjane II, B.P. 15290  
Al Mansour, Meknès  
Morocco

**Address:**

M. Sarih  
Department of Mathematics  
Faculty of Sciences  
BP 11201  
Zitoune, Meknès  
Morocco