1167-47-109 **Hoger Ghahramani** and **Wu Jing*** (wjing@uncfsu.edu). *Lie centralizers at zero products on a class of operator algebras.*

Let $\mathcal{A}$ be an algebra. In this talk we will discuss the problem of determining a linear map ψ on $\mathcal{A}$ satisfying $a, b \in \mathcal{A}$, $ab = 0 \Longrightarrow \psi([a, b]) = [\psi(a), b]$ $(C1)$ or $ab = 0 \Longrightarrow \psi([a, b]) = [a, \psi(b)]$ $(C2)$. We first compare linear maps satisfying $(C1)$ or $(C2)$, commuting linear maps, and Lie centralizers with a variety of examples. In fact, we see that linear maps satisfying $(C1)$, $(C2)$ and commuting linear maps are different classes of each other. Then we introduce a class of operator algebras on Banach spaces such that if $\mathcal{A}$ is in this class, then any linear map on $\mathcal{A}$ satisfying $(C1)$ (or $(C2)$) is a commuting linear map. As an application of these results we characterize Lie centralizers and linear maps satisfying $(C1)$ (or $(C2)$) on nest algebras. (Received February 26, 2021)