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**Joseph W. Iverson\*** (iverson@uoregon.edu), Department of Mathematics, University of Oregon, Eugene, OR 97403. *Frames generated by compact group actions.*

Let  $K$  be a compact group, and let  $\rho$  be a unitary representation of  $K$  on a Hilbert space  $\mathcal{H}_\rho$ . We introduce an operator-valued bracket  $[\cdot, \cdot]: \mathcal{H}_\rho \times \mathcal{H}_\rho \rightarrow \bigoplus_{\pi \in \hat{K}} B(\mathcal{H}_\pi)$  which can be used to compute vital information about the structure of  $\rho$ . For  $f \in \mathcal{H}_\rho$ , we explain how the frame properties of the orbit  $\{\rho(\xi)f\}_{\xi \in K}$  can be deduced from the eigenvalues of the operators  $[f, f](\pi)$ ,  $\pi \in \hat{K}$ . If time permits, we will use bracket analysis to classify frames generated by unitary actions of  $K$ . (Received September 22, 2015)