1039-28-19 **Yuichiro Kakihara*** (ykakihar@csusb.edu), Department of Mathematics, California State University, San Bernardino, CA 92407-2397. *Integration with respect to a Hilbert-Schmidt class operator valued measure.*

We consider integration theory for operator valued functions with respect to a Hilbert-Schmidt class operator valued measure. We use Dunford-Schwartz type integrals. More specifically, let H and K be separable Hilbert spaces and $X = S(K, H)$ be the Hilbert space of all Hilbert-Schmidt class operators from K to H. Then a Dunford-Schwartz type integrability of an operator (not necessarily bounded) valued function Φ with respect to an X-valued measure ξ of bounded operator semivariation is defined. We show that the space $\mathfrak{L}^1_{DS}(\xi)$ of all ξ-integrable functions is a Banach space when ξ is gramian orthogonally scattered. For a general ξ a certain subspace $\mathfrak{L}^1_*(\xi)$ of $\mathfrak{L}^1_{DS}(\xi)$ becomes a Banach space with a suitable norm. We investigate some relations with operator bimeasure theory. (Received February 11, 2008)