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**Hamed Mohd Obiedat\*** (hobiedat@hu.edu.jo), The Hashemite University, Department of Mathematics, P.O.Box 150459, Zarqa, 13115, Jordan. *(w1,w2)-tempered ultra distributions representation theorems.*

We prove topological characterizations of the space  $S(w_1, w_2)$  of test functions of tempered ultra distribution via the Fourier transform and the short-time Fourier transform. We use this characterizations and classical Riesz representation theorem to prove representation theorems for  $(w_1, w_2)$ -tempered ultra distributions. Moreover, we investigate the action of operator semigroups on  $(w_1, w_2)$ -tempered ultra distributions. (Received March 02, 2013)