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**Heide Gluesing-Luerssen\*** (heidegl@ms.uky.edu), University of Kentucky, Dept. of Mathematics, 715 Patterson Office Tower, Lexington, KY 40506-0027. *A MacWilliams Identity for Convolutional Codes.*

Convolutional codes can be described as linear input-state-output systems. This gives rise to a state transition graph and an associated weight adjacency matrix. The latter collects in a detailed manner information about the weight distribution of the code. After showing that this matrix is an invariant of the code we will present a MacWilliams identity theorem for convolutional codes and their dual codes in terms of the weight adjacency matrix. The identity involves the MacWilliams matrix known from complete weight enumerators of block codes. (Received July 16, 2007)