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**Alberto A. Condori\*** ([condori@rose-hulman.edu](mailto:condori@rose-hulman.edu)), Department of Mathematics, Rose-Hulman Institute of Technology, 5000 Wabash Avenue, Terre Haute, IN 47803. *An index formula in connection with meromorphic approximation.* Preliminary report.

This talk is about Harmonic Analysis of Operators on Hilbert spaces. We introduce the so-called Nehari-Takagi problem, its superoptimal solutions and provide a characterization of bounded functions that have a unique meromorphic approximation with a prescribed McMillan degree. For these functions, we introduce an index formula that shows a connection between Toeplitz operators, Hankel operators and the McMillan degree. Moreover, we provide an example of how this formula can be used to study perturbation of singular values of Hankel operators. (Received September 22, 2009)