1067-47-593Ronald G. Douglas* (rdouglas@math.tamu.edu), TAMU-3368, College Station, TX77843=3368, and Yun-Su Kim, Hyun Kwon and Jaydeb Sarkar. Canonical Models for
Quasi-Free Hilbert Modules.

One can interpret the canonical model of Sz.-Nagy and Foias for contraction operators in terms of quotients of Hardy Hilbert Modules. We study generalizations of such models in which the Hardy module is replaced by other related building-block Hilbert modules such as those defined by weighted Bergman spaces. We show that when the "quotient operator" is in the Cowen-Douglas class the associated hermitian holomorphic vector bundle can be represented as a vector bundle tensor product involving the characteristic function and the bundle for the building-block module. This identification enables one to calculate the curvature of the associated Chern connection in terms of the "characteristic operator function." In particular, one shows that the isomorphism of two such quotient modules is independent of the building block Hilbert module, which is the Hardy module in the classical case. (Received September 10, 2010)