Linhong Wang* (lwang@selu.edu), SLU 10687, Hammond, LA 70402, and Blaise Heider.

Classification on irreducible representations of the quantum Weyl algebra at roots of unity given by matrices. Preliminary report.

To describe the representation theory of the quantum Weyl algebra at an \( l \)th primitive root \( \gamma \) of unity, Boyette, Leyk, Plunkett, Sipe, and Talley found all nonsingular irreducible matrix solutions to the equation \( yx - \gamma xy = 1 \), assuming \( yx \neq xy \). We complete their result by finding all irreducible matrix solutions \((X,Y)\), where \( X \) is singular. All irreducible solutions, singular or nonsingular, are classified up to equivalence. (Received September 25, 2012)