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J Ding* (jiudin@gmail.com), Depart of Mathematics, Hattiesburg, MS 39406-5045, N Rhee, Department of Mathematics and Statistics, Kansas City, MO 64110, and C Zhang, Department of Mathematics, Hattiesburg, MS 39406-5045. Solving the Yang-Baxter-type Matrix Equation.

The matrix equation AXA = XAX is called the Yang-Baxter-type matrix equation because of its similarity in format to the classic Yang-Baxter equation which is closely related to knot theory, braid groups, and etc. We present some recent work on solving this equation and analyze the structure of the solution set for different classes of matrix A. (Received September 16, 2014)