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P. Jameson Graber*, jameson_graber@baylor.edu, and **Ronnie Sircar**. *Master equation for a mean field game of exhaustible resource.*

We present the master equation for a mean field game of exhaustible resources, based on a model introduced by Chan and Sircar in an article published in SIAM Review (cf. Guéant, Lasry, Lions in the Paris-Princeton Lectures). Unlike other studies of the master equation, this model has two features that create new technical difficulties. First, the Hamiltonian depends in part on the distribution of controls, hence this is an example of a “mean field game of controls.” Second, the boundary conditions are of absorbing type, which means the population distribution is not a probability distribution for all time. Nevertheless, we prove the existence of suitably defined solutions to the master equation under certain conditions on the data. (Received January 16, 2021)