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**Andrea Carracedo Rodriguez\*** (crandrea@vt.edu) and **Serkan Gugercin**. *The AAA algorithm for parametric dynamical systems.*

The AAA algorithm is a popular method that builds a rational approximation of single variable functions from data. In many applications, the dynamics of the system may depend on various parameters. Hence we have extended the AAA algorithm to approximate multivariate functions. This extension is also data-driven, i.e., it only requires function evaluations. We present several numerical examples to illustrate the effectiveness of the algorithm. We include multi-input/multi-output examples to show how the algorithm may be extended to matrix-valued functions. (Received September 17, 2019)