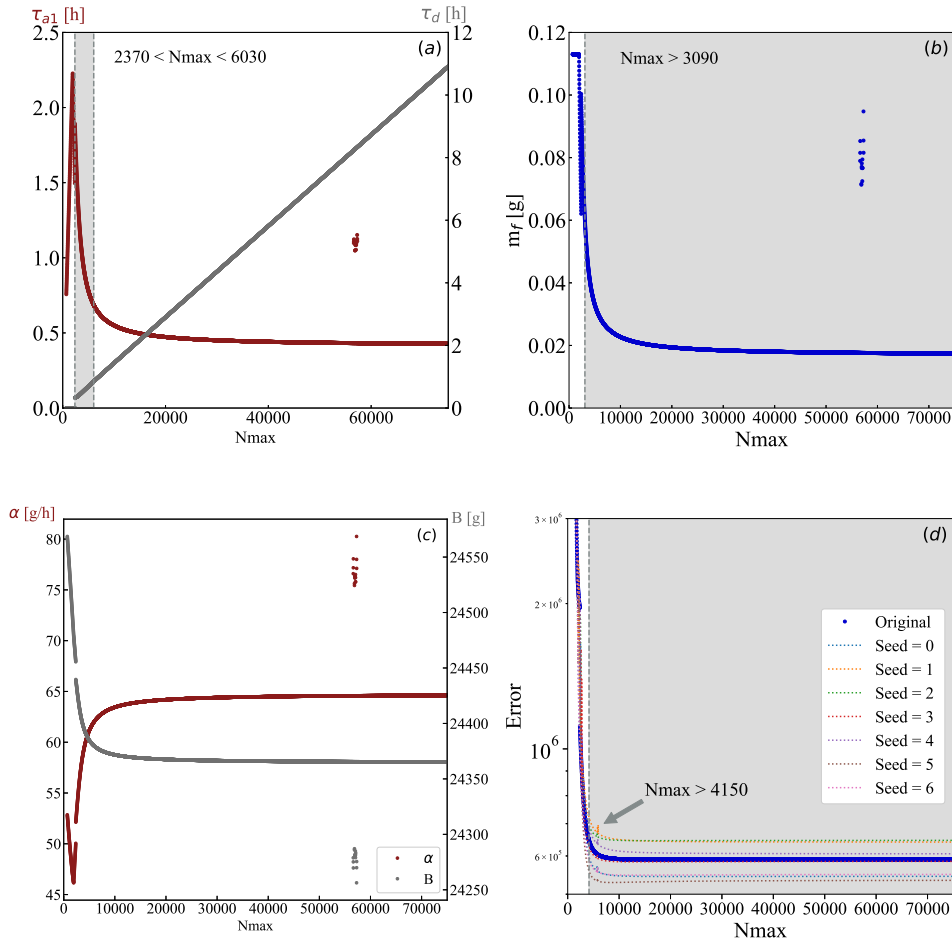# Supporting Information

S 1 Fig. Multiple solutions are obtained from the Hive 6 on 2018-4-7, and then reduced to a confidence interval. *(a) The time spent inside, τ_d, and outside the hive during the day, τ_{a_1} is compared with reported intervals of time inside the hive taking by the forager bees between trips, and an average of time outside the hive per flying. Then, a valid interval is selected considering previous reports. (b) The maximum reported food load collected per trip (crop load) is 0.077 g. The shaded area represents a region where an acceptable crop load is obtained. (c) Representation of two characteristic parameters, the rate of gained weight and the intersection with $t = 0$, as N_{max} decreases B and α become unstable. (d) Error calculated as the sum of the squared difference between the model and the real data. The shaded area represents a region where an acceptable error occurs based on bootstrapping simulation.*