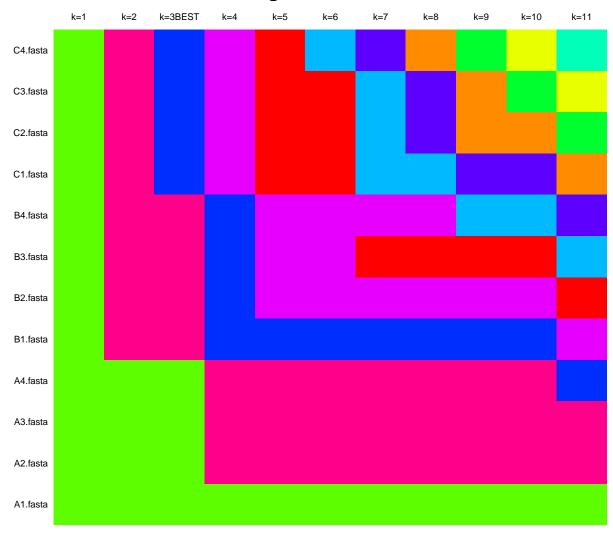Partitioning scheme for values of k