

**ABSTRACT.** Dykstra's cyclic projections algorithm allows one to compute best approximations to any point  $x$  in a Hilbert space from the intersection  $C = \bigcap_1^r C_i$  of a finite number of closed convex sets  $C_i$ , by reducing it to a sequence of best approximation problems from the *individual* sets  $C_i$ . Here we present two generalizations of this algorithm. First we allow the number of sets  $C_i$  to be *infinite* rather than finite; secondly, we allow a *random*, rather than cyclic, ordering of the sets  $C_i$ .