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Semigroup and chromatic Number of a (-Closed Family

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We investigate the structure of a family F of finite subsets of a set Y=UF, closed under union, from the standpoint of a particular semigroup of transformations acting upon F. the effect of a transformation on a set in f, if any, consists in adding or removing some minimal set, which results in forming some other set in F. In this framework, we show that sensible parameter of 'dimension' of F can be defined, whose value is equal to the chromatic number of a distinguished graph associated with F. If the value of that chromatic number is n, then the set of all transformations can be partitioned into n classes, such that within each class, the transformations are partially ordered in a consistent manner. this construction leads to an appealing coordinate representation of the family F.