



# Natural Families

## 1 Why

It is extremely common to use the first so many natural numbers as an index set.

## 2 Definition

A *natural family* of sets is a indexed family of sets whose index set is an subset of the natural numbers smaller than or equal to some specified natural number.

### 2.1 Notation

Let  $n$  be a natural number. Let  $A$  be a non-empty set. Let  $a : \{1, \dots, n\} \rightarrow A^*$  We often denote the family of  $a$  by  $A_1, \dots, A_n$ . We often say, "let  $A_1, \dots, A_n$  be sets," without any reference to the fact that we are thinking of a family.