

Funcons-beta: Tuples *

The P_{LAN}CompS Project

Tuples.cbs | PLAIN | PRETTY

Tuples

```
[ Datatype tuples
  Funcon tuple-elements
  Funcon tuple-zip ]
```

```
Meta-variables  T1, T2 <: values
                 T1+, T2+ <: values+
                 T*, T1*, T2* <: values*
```

```
Datatype tuples(T*) ::= tuple(_ : T*)
```

T^* can be any sequence of types, including $()$ and values^* .

The values of type $\text{tuples}(T_1, \dots, T_n)$ are of the form $\text{tuple}(V_1, \dots, V_n)$ with $V_1 : T_1, \dots, V_n : T_n$.

```
Funcon tuple-elements(_ : tuples(T*)) :  $\Rightarrow(T^*)$ 
Rule   tuple-elements(tuple(V* : T*))  $\rightsquigarrow V^*$ 
```

```
Funcon tuple-zip(_ : tuples(values*), _ : tuples(values*)) :  $\Rightarrow(\text{tuples}(\text{values}, \text{values}))^*$ 
```

$\text{tuple-zip}(TV_1, TV_2)$ takes two tuples, and returns the sequence of pairs of their elements, provided that they have the same length. If they have different lengths, the last elements of the longer sequence are ignored.

```
Rule tuple-zip(tuple(V1 : T1, V1* : T1*), tuple(V2 : T2, V2* : T2*))  $\rightsquigarrow$ 
    (tuple(V1, V2), tuple-zip(tuple(V1*), tuple(V2*)))
Rule tuple-zip(tuple(), tuple())  $\rightsquigarrow ()$ 
Rule tuple-zip(tuple(V1+ : T1+), tuple())  $\rightsquigarrow ()$ 
Rule tuple-zip(tuple(), tuple(V2+ : T2+))  $\rightsquigarrow ()$ 
```

*Suggestions for improvement: plancomps@gmail.com.
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.