

Gaining confidence in hts

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From SnG.nb:

```
UU[expr_] // hts[y_, x_] := S[UU[Expand[expr /. {
  a[f_, i_, j_] => a[f, i, j] -  $\epsilon_5 K\delta_{j,y} \gamma[\partial_{b_x} f, i, y]$  -
     $K\delta_{1,x} K\delta_{j,y} (\epsilon_6 \beta[f b_x] + \epsilon_7 c[f, y] - \epsilon_8 \delta\beta[b_x \partial_{b_x} f])$ ,
   $\delta a[f_, x, y] => \delta a[f, x, y] - \epsilon_9 \delta\beta[f b_x]$ ,
  ca[f_, i_, j_, k_] => ca[f, i, j, k] +  $\epsilon_{10} K\delta_{1,y} K\delta_{j,x} \gamma[f, x, k]$  +
     $K\delta_{j,x} K\delta_{k,y} c[-\epsilon_{11} f b_x, i]$ ,
   $\delta aa[f_, i_, j_, k_, l_] => \delta aa[f, i, j, k, l] + \epsilon_{12} K\delta_{1,x} K\delta_{j,y} \delta a[-b_x f, k, l] +$ 
     $\epsilon_{13} K\delta_{1,x} K\delta_{1,y} (-\delta a[b_x f, x, j] + \delta a[b_x f, k, j]) +$ 
     $\epsilon_{14} K\delta_{k,x} K\delta_{j,y} (\delta a[b_x f, x, l] - \delta a[b_x f, i, l]) +$ 
     $\epsilon_{15} K\delta_{k,x} K\delta_{1,y} \delta a[-b_x f, i, j] + \epsilon_{16} K\delta_{1,x} K\delta_{j,l,y} \delta\beta[b_x b_k f] +$ 
     $2 \epsilon_{17} K\delta_{x,1,k} K\delta_{y,j,l} \delta\beta[b_x b_x f]$ 
}]]];
```



```
Table[i ->  $\epsilon_i$ , {i, 5, 17}]
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```
{5 ->  $\epsilon_5$ , 6 ->  $\epsilon_6$ , 7 ->  $-\epsilon_5$ , 8 ->  $\epsilon_5 \epsilon_9$ , 9 ->  $\epsilon_9$ , 10 ->  $\epsilon_{10}$ , 11 ->  $\epsilon_{10}$ ,
  12 ->  $\epsilon_{10}$ , 13 ->  $-\epsilon_{10}$ , 14 ->  $\epsilon_{10}$ , 15 ->  $\epsilon_{10}$ , 16 ->  $-\epsilon_9 \epsilon_{10}$ , 17 ->  $\epsilon_9 \epsilon_{10}$ }
```

ϵ_5 : The action of a head on an F, in a.

ϵ_6 : The action of a head on its own tail, in a.
Should be fixed by a ct axiom!

ϵ_9 : As ϵ_6 , in $\mathbb{F}\alpha$.

ϵ_{10} : The action of a c on a tail.