

tb[x_][UU[L_], UU[R_]] :=

CF[UU[Expand[Distribute[pp[L, R]] /. {

pp[0, _] → 0, pp[_, 0] → 0,

pp[_β | _δβ | _δa | _δaa, _β | _δβ | _δa | _δaa] → 0,

pp[u_β | u_δβ | u_δa | u_δaa, v_a] := -pp[v, u]

} /. {

pp[a[f_, x, j_], u_] := (u /. {

β[g_] := δhb[f ∂_{b_x}g, x, ϕ, j],

a[g_, k_, l_] := γa[f ∂_{b_x}g, x, j, k, l] +

Kδ_{xk} (-γa[g ∂_{b_k}f, k, l, x, j] +

δtb[f g, x, j, l]),

_ → 0

}),

pp[a[f_, j_, k_], a[g_, x, l_]] /. j != x :=

-γa[g ∂_{b_x}f, x, l, j, k],

pp[_, _] → 0

]]]];