

Pensieve header: The braid rep restricted to ao.

```
SetDirectory@"C:\\drorbn\\AcademicPensieve\\Projects\\OneCo-1604";
<< Global.m;
ExportButton
```

In the  $U(T) \otimes U(H)$  conventions. Internal use symbols: {rr, pp}



From MostGeneralR-UU.nb:

```
TSD[Association@@Table[i -> CF[AForm[R[jj, kk]_i /.
  {gg2|4|5|7[_] -> 0, gg6[x_] -> (2-x)/(2*x^2), gg8[x_] -> 1/x, cc1 -> 0}]], {i, {jj, kk}}]]
```

```
TSD[
  <|jj -> UU[a[1, jj, hoo] + aao[-(1 + e^-b_jj + b_jj)/b_jj^2, jj, hoo, jj, kk] + aao[1/b_kk, jj, hoo, kk, kk] +
  ca[1/b_jj, hoo, jj, kk]], kk -> UU[a[e^b_jj, kk, hoo] + a[-(1 + e^b_jj) b_kk/b_jj, jj, hoo] +
  aao[e^-b_jj (-1 + e^b_jj)^2/b_jj^2, jj, hoo, jj, kk] + aao[1/b_jj b_kk, jj, hoo, kk, kk] +
  ao[-(1 + e^b_jj - e^b_jj b_kk)/b_jj, jj, hoo] + ca[-(1 - e^-b_jj)/b_jj, hoo, jj, kk]]|>]
```

```
RR[jj_, kk_] := TSD[<|jj -> deltaForm@UU[a[1, jj, hoo]], kk -> deltaForm@
  UU[a[e^b_jj, kk, hoo] + a[-(1 + e^b_jj) b_kk/b_jj, jj, hoo] + epsilon ao[-(1 + e^b_jj - e^b_jj b_kk)/b_jj, jj, hoo]]|>]
```

RR[1, 2]

```
TSD[<|1 -> UU[a[1, 1, hoo]], 2 -> UU[a[e^b1, 2, hoo] + a[-(1 + e^b1) b2/b1, 1, hoo] +
  delta a[epsilon (-1 + e^b1 - e^b1 b2)/b1, 1, hoo] + delta a[epsilon (1 - e^b1 + e^b1 b2), phi, hoo]]|>]
```

UU@beta[f[b1, b2]] // RR[1, 2]

```
UU[beta[f[b1, b2]]]
```

UU@a[f[b1, b2], 2, hoo] // RR[1, 2]

```
UU[a[e^b1 f[b1, b2], 2, hoo] + a[-(1 + e^b1) f[b1, b2] b2/b1, 1, hoo] +
  delta a[epsilon f[b1, b2] (-1 + e^b1 - e^b1 b2)/b1, 1, hoo] + delta a[epsilon f[b1, b2] (1 - e^b1 + e^b1 b2), phi, hoo]]
```

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 1, h∞] // RR[1, 2] // RR[1, 3] // RR[2, 3]**

UU[a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 1, h∞]]

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 1, h∞] // RR[2, 3] // RR[1, 3] // RR[1, 2]**

UU[a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 1, h∞]]

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 2, h∞] // RR[1, 2] // RR[1, 3] // RR[2, 3]**

$$\text{UU}\left[a\left[e^{b_1} f[b_1, b_2, b_3], 2, h_\infty\right] + a\left[-\frac{(-1 + e^{b_1}) f[b_1, b_2, b_3] b_2}{b_1}, 1, h_\infty\right] + \delta a\left[\frac{\epsilon f[b_1, b_2, b_3] (-1 + e^{b_1} - e^{b_1} b_2)}{b_1}, 1, h_\infty\right] + \delta a\left[\epsilon f[b_1, b_2, b_3] (1 - e^{b_1} + e^{b_1} b_2), \zeta, h_\infty\right]\right]$$

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 2, h∞] // RR[2, 3] // RR[1, 3] // RR[1, 2]**

$$\text{UU}\left[a\left[e^{b_1} f[b_1, b_2, b_3], 2, h_\infty\right] + a\left[-\frac{(-1 + e^{b_1}) f[b_1, b_2, b_3] b_2}{b_1}, 1, h_\infty\right] + \delta a\left[\frac{\epsilon f[b_1, b_2, b_3] (-1 + e^{b_1} - e^{b_1} b_2)}{b_1}, 1, h_\infty\right] + \delta a\left[\epsilon f[b_1, b_2, b_3] (1 - e^{b_1} + e^{b_1} b_2), \zeta, h_\infty\right]\right]$$

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 3, h∞] // RR[1, 2] // RR[1, 3] // RR[2, 3] // ÅForm**

$$\text{UU}\left[a\left[e^{b_1+b_2} f[b_1, b_2, b_3], 3, h_\infty\right] + a\left[-\frac{(-1 + e^{b_1}) f[b_1, b_2, b_3] b_3}{b_1}, 1, h_\infty\right] + a\left[-\frac{e^{b_1} (-1 + e^{b_2}) f[b_1, b_2, b_3] b_3}{b_2}, 2, h_\infty\right] + a o\left[\frac{\epsilon f[b_1, b_2, b_3] (-1 + e^{b_1} - e^{b_1} b_3)}{b_1}, 1, h_\infty\right] + a o\left[\frac{e^{b_1} \epsilon f[b_1, b_2, b_3] (-1 + e^{b_2} - e^{b_2} b_3)}{b_2}, 2, h_\infty\right]\right]$$

**UU@a[f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>], 3, h∞] // RR[2, 3] // RR[1, 3] // RR[1, 2] // ÅForm**

$$\text{UU}\left[a\left[e^{b_1+b_2} f[b_1, b_2, b_3], 3, h_\infty\right] + a\left[-\frac{(-1 + e^{b_1}) f[b_1, b_2, b_3] b_3}{b_1}, 1, h_\infty\right] + a\left[-\frac{e^{b_1} (-1 + e^{b_2}) f[b_1, b_2, b_3] b_3}{b_2}, 2, h_\infty\right] + a o\left[\frac{e^{b_1} \epsilon f[b_1, b_2, b_3] (-1 + e^{b_2} - e^{b_2} b_3)}{b_2}, 2, h_\infty\right] + a o\left[\frac{1}{b_1 b_2} \epsilon f[b_1, b_2, b_3] (-(-1 + e^{b_1}) (-1 + e^{b_2}) b_3 + b_2 (-1 + e^{b_1} + (-e^{b_1} - e^{b_2} + e^{b_1+b_2}) b_3)), 1, h_\infty\right]\right]$$

$$\frac{\epsilon f[b_1, b_2, b_3] (-1 + e^{b_1} - e^{b_1} b_3)}{b_1} - \frac{1}{b_1 b_2}$$

**ε f[b<sub>1</sub>, b<sub>2</sub>, b<sub>3</sub>] (-(-1 + e<sup>b<sub>1</sub></sup>) (-1 + e<sup>b<sub>2</sub></sup>) b<sub>3</sub> + b<sub>2</sub> (-1 + e<sup>b<sub>1</sub></sup> + (-e<sup>b<sub>1</sub></sup> - e<sup>b<sub>2</sub></sup> + e<sup>b<sub>1</sub>+b<sub>2</sub></sup>) b<sub>3</sub>)) // Expand**

$$\frac{e^{b_2} \epsilon f[b_1, b_2, b_3] b_3}{b_1} - \frac{e^{b_1+b_2} \epsilon f[b_1, b_2, b_3] b_3}{b_1} + \frac{\epsilon f[b_1, b_2, b_3] b_3}{b_1 b_2} - \frac{e^{b_1} \epsilon f[b_1, b_2, b_3] b_3}{b_1 b_2} - \frac{e^{b_2} \epsilon f[b_1, b_2, b_3] b_3}{b_1 b_2} + \frac{e^{b_1+b_2} \epsilon f[b_1, b_2, b_3] b_3}{b_1 b_2}$$

**Column@**

```

Table[x → ct[h∞, t∞][δaForm@x, UU@β[bt∞]] // ÅForm, {x, h∞ÅBasis[{1, 2}, 1]}]
UU[a[1, 1, h∞]] → UU[β[b1]]
UU[a[1, 2, h∞]] → UU[β[b2]]
UU[c[1, h∞]] → UU[δβ[1]]
UU[ao[1, 1, h∞]] → UU[0]
UU[ao[1, 2, h∞]] → UU[0]
UU[ca[1, 1, 1, h∞]] → UU[c[b1, 1]]
UU[ca[1, 2, 1, h∞]] → UU[c[b1, 2]]
UU[ca[1, h∞, 1, 1]] → UU[ao[1, 1, 1] + c[b1, 1]]
UU[ca[1, h∞, 1, 2]] → UU[ao[1, 1, 2] + c[b1, 2]]
UU[ca[1, 1, 2, h∞]] → UU[c[b2, 1]]
UU[ca[1, 2, 2, h∞]] → UU[c[b2, 2]]
UU[ca[1, h∞, 2, 1]] → UU[ao[1, 2, 1] + c[b2, 1]]
UU[ca[1, h∞, 2, 2]] → UU[ao[1, 2, 2] + c[b2, 2]]
UU[aaο[1, 1, 1, 1, h∞]] → UU[c[-b12, 1]]
UU[aaο[1, 1, 2, 1, h∞]] → UU[c[-b12, 2]]
UU[aaο[1, 1, 1, 2, h∞]] → UU[c[-b1 b2, 1]]
UU[aaο[1, 1, 2, 2, h∞]] → UU[c[-b1 b2, 2]]
UU[aaο[1, 2, 1, 2, h∞]] → UU[c[-b22, 1]]
UU[aaο[1, 2, 2, 2, h∞]] → UU[c[-b22, 2]]

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