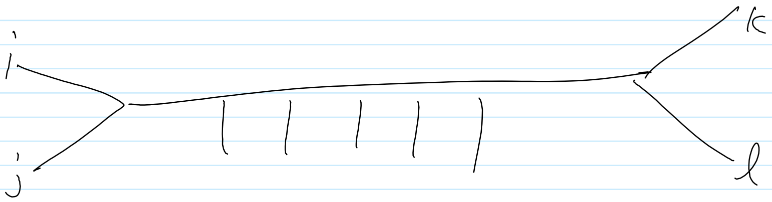
Scratch

Sunday, September 6, 2015 12:31 PM

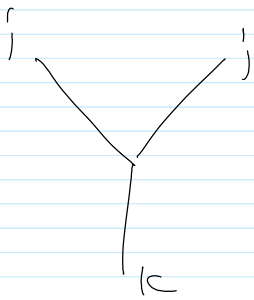
"Reverse advising"

There ought to be a control-theory interpretation of \omega!



$$\begin{array}{c|cccc} & i & j & k & l \\ \hline i & & & b_j b_l & -b_j b_k \\ j & & & -b_i b_l & -b_i b_k \\ k & \multicolumn{2}{c}{\multirow{2}{*}{$\left(T \right)$}} & & \\ l & & & & \end{array}$$

Easily computable!



$\longrightarrow$

$$\begin{array}{c|ccc} & i & j & k \\ \hline i & 0 & b_k & -b_j \\ j & -b_k & 0 & b_i \\ k & b_j & -b_i & 0 \end{array}$$

Only get AS matrices! ??

Possibly the correct property is that

$$D^{-1} A D = A^T \qquad \left(\text{maybe } D^{-1} A D = -A^T\right)$$

where $D = \begin{pmatrix} b_1 & & 0 \\ & \ddots & \\ 0 & & b_n \end{pmatrix}$.

$\delta y = Ax \, ?^{\perp} - \int (m\, x_i) \cdot \forall\, y = Ax$?

$$\eta\cdot y + x\chi = 0\}$$

$$= \{(\eta,\chi) : \forall x \quad \eta\cdot Ax + x\chi = 0\}$$

$$\Updownarrow$$

$$(A^T\eta)\cdot x + \chi x = 0$$

$$\Updownarrow$$

$$(A^T\eta + \chi)x = 0$$

$$\Rightarrow \quad \chi = -A^T\eta$$

$$\langle V, W\rangle := \bar{V}^T D W$$

$$0 = \langle A^T V, W\rangle + \langle V, AW\rangle =$$

$$= \bar{V}^T \bar{A}^T D W + \bar{V}^T D A W$$

$$\Rightarrow \quad \bar{A}^T D + DA = 0$$

$t^{jk}\begin{pmatrix} x_j \\ x_k \end{pmatrix} = \begin{pmatrix} b_k & -b_j \\ -b_k & b_j \end{pmatrix}\begin{pmatrix} x_j \\ x_k \end{pmatrix} =: A\begin{pmatrix} x_j \\ x_k \end{pmatrix}$ and with $D = \begin{pmatrix} b_j^{-1} & 0 \\ 0 & b_k^{-1} \end{pmatrix}$, we have $\bar{A}^T D + DA = 0$. Whence cometh?

$$\begin{pmatrix} -b_k & b_k \\ b_j & -b_j \end{pmatrix}\begin{pmatrix} b_j^{-1} & 0 \\ 0 & b_k^{-1} \end{pmatrix} = \begin{pmatrix} -b_k/b_j & 1 \\ 1 & -b_j/b_k \end{pmatrix}$$

$$\begin{pmatrix} b_j^{-1} & 0 \\ 0 & b_k^{-1} \end{pmatrix}\begin{pmatrix} b_k & -b_j \\ -b_k & b_j \end{pmatrix} = \begin{pmatrix} b_k/b_j & -1 \\ -1 & b_j/b_k \end{pmatrix}$$
