Trans-
fer
Ma-
trix
Method
**??**
$(34.587345, 0.7345312)A_N$
$(34.607346, -1.0454688)D_N$
[linewidth=0.04cm,arrowsize=0.12cm 2.2,arrowlength=1.5,arrowinset=0.4]->(0.02,0.21953125)(2.22,0.21953125)
[linewidth=0.04cm,arrowsize=0.12cm 2.2,arrowlength=1.5,arrowinset=0.4]->(2.2799644,-0.7893236)(0.08003564,-0.77161384)
$(1.0773437, 0.63453126)A_0$
$(1.0973438, -1.1454687)D_0$
$(13.957344, 1.1945312)L_b$
$(15.857344, -0.72546875)L_w$
$M_t$
$A_0$
$D_0$
$A_N$
$D_N$
$A_0 D_0 = M_{t11} M_{t12} M_{t21} M_{t22} A_N D_N$

(1)
$A_0$
$D_N$
$M_{t11} = 0$

(2)
$M_t$
**??**
$M_b(L_b/2)$
$M_{bw}$
$M_w(L_w)$
$M_{wb}$
$M_{cell} = m_{11} m_{12} m_{21} m_{22} = M_b(L_b/2) M_{bw} M_w(L_w) M_{wb} M_b(L_b/2)$

(3)
$(7.7342186, -0.85546875)L_w$
$(11.284219, 1.9445312)\frac{L_b}{2}$
$(4.584219, 1.9645313)\frac{L_b}{2}$
$(11.874219, -1.8954687)M_b\left(\frac{L_b}{2}\right)$
$(3.5342188, -1.8954687)M_b\left(\frac{L_b}{2}\right)$
$(10.054218, -1.9154687)M_{wb}$
$(5.394219, -1.9154687)M_{bw}$
$(7.784219, -1.9154687)M_w\left(L_w\right)$

$M_b(L_b/2) = \exp(k_b L_b/2) 0 0 \exp(k_b L_b/2)$

(4)

$M_{bw} = \frac{1}{2} 1 - i\frac{k_w}{k_b} 1 + i\frac{k_w}{k_b} 1 + i\frac{k_w}{k_b} 1 - i\frac{k_w}{k_b}$

(5)

$M_w(L_w) = \exp(-ik_w L_w) 0 0 \exp(ik_w L_w)$

(6)

$M_{wb} = \frac{1}{2} 1 + i\frac{k_b}{k_w} 1 - i\frac{k_b}{k_w} 1 - i\frac{k_b}{k_w} 1 + i\frac{k_b}{k_w}$

(7)
$k_w$
$k_b$
$w =$
$\sqrt{\frac{2m_{eff}E}{\hbar^2}}$
$k_b =$
$\sqrt{\frac{2m_{eff}(V_0 - E)}{\hbar^2}}$
$b -$
$P2 - M_w b into M_c we obtain:$
$m_{11} =$
$\exp(k_b L_b)\left[\cos(k_w L_w) - 0.5\left(\frac{k_w}{k_b} - \frac{k_b}{k_w}\right)\sin(k_w L_w)\right]$
$m_{12} =$