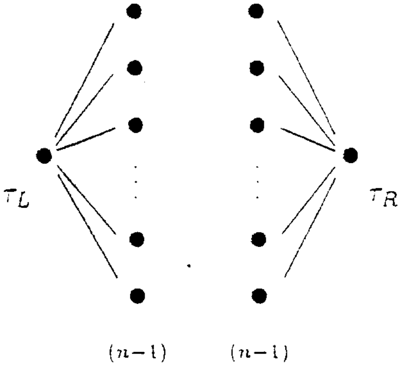
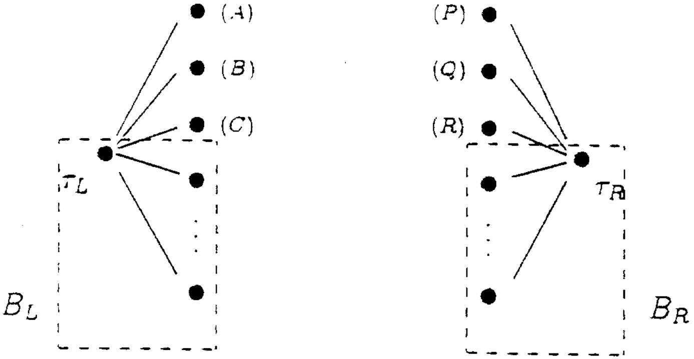
$$\frac{\partial g}{\partial x}(1_\tau) = \begin{array}{c} \left(\begin{array}{c|c} \bar{R}_0^i - \bar{R}_1^i & 0 \\ \hline \multicolumn{2}{c}{r_0^i - r_1^i} \end{array}\right) \\ \underbrace{\qquad\qquad}_{1,\dots,k} \quad \underbrace{\qquad\qquad}_{k+1,\dots,n} \end{array} \begin{array}{l} i = \left\{\begin{array}{c} 1 \\ \vdots \\ \ell \end{array}\right. \\ i = \left\{\begin{array}{c} \ell+1 \\ \vdots \\ m \end{array}\right. \end{array}$$

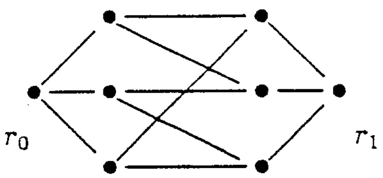
130

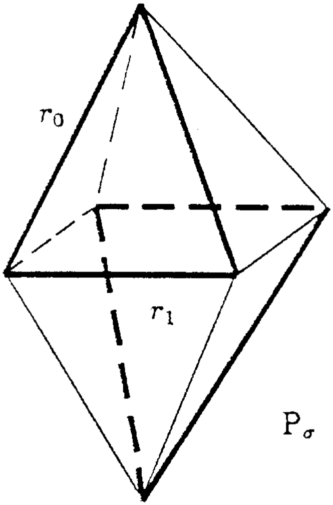


131



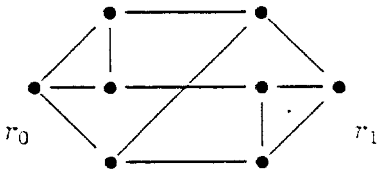
(I) The octahedron ($m = 1$; $n = 4$)

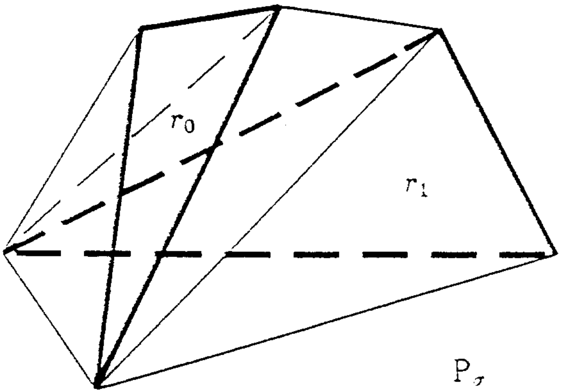



r_0
r_1
P_σ

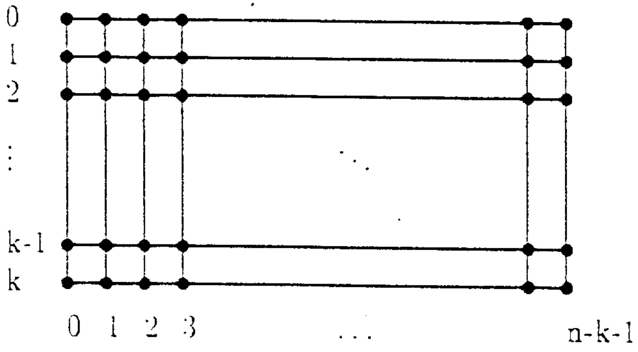
(cf. (5.1)).

(II) The tent ($m = 1$; $n = 4$)



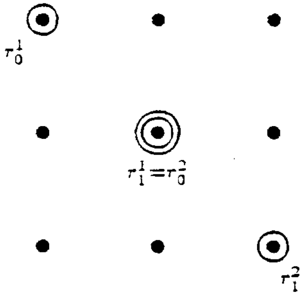

r_0
r_1
P_σ

(cf. (5.2)).


0
1
2
k-1
k
0
1
2
3
...
n-k-1

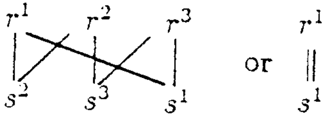
136

(III) The super triangle $P_\sigma \doteq (\Delta^2 \times \Delta^2)^\vee$ ($n = 2$, $n = 5$)


r_0^1
$r_1^1 = r_0^2$
r_1^2

139

Squeezing of the corresponding cone $\check{\sigma}$ means the contraction of the triangle that is spanned by the three R-elements to one point (cf. (5.3)).


r^1
r^2
r^3
s^2
s^3
s^1
or
r^1
s^1

140

$(IV)_{P_1,\ldots,P_\ell}$ The double simplex

$P_\sigma^\vee = (B_{p_1}, \ldots, B_{p_\ell})$ is built up from blocks of the form

$B_p := \left(x \; r^1 \; r^2 \; \cdots \; r^{p-1} \; r^p \right)$ ($p \geq 0$; "x" denotes a good face)

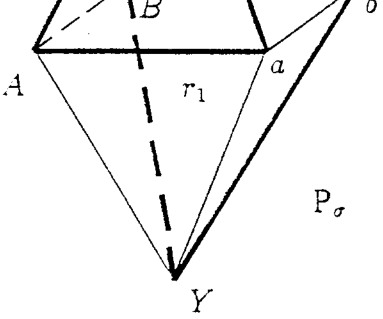
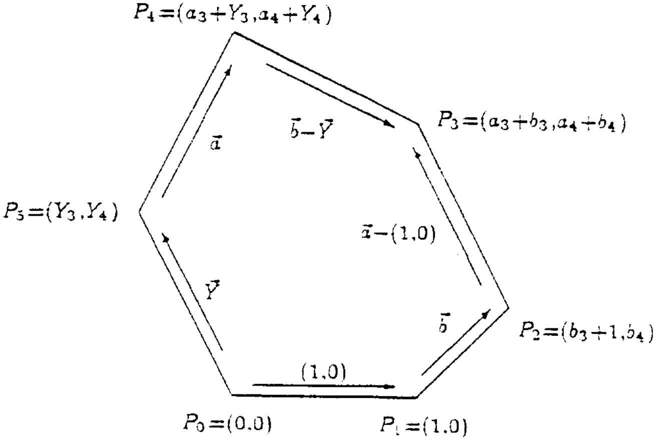
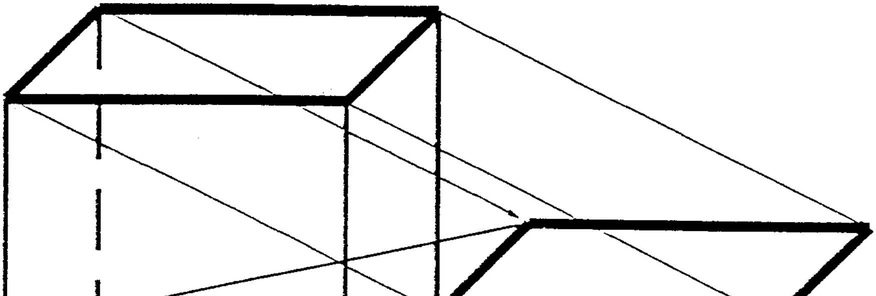

B
b
A
a
r_1
P_σ
Y

Figure 5.1


$P_4=(a_3+Y_3,a_4+Y_4)$
$\vec{b}-\vec{Y}$
$P_3=(a_3+b_3,a_4+b_4)$
$\vec{a}$
$P_5=(Y_3,Y_4)$
$\vec{a}-(1,0)$
$\vec{Y}$
$\vec{b}$
$P_2=(b_3+1,b_4)$
(1,0)
$P_0=(0,0)$
$P_1=(1,0)$



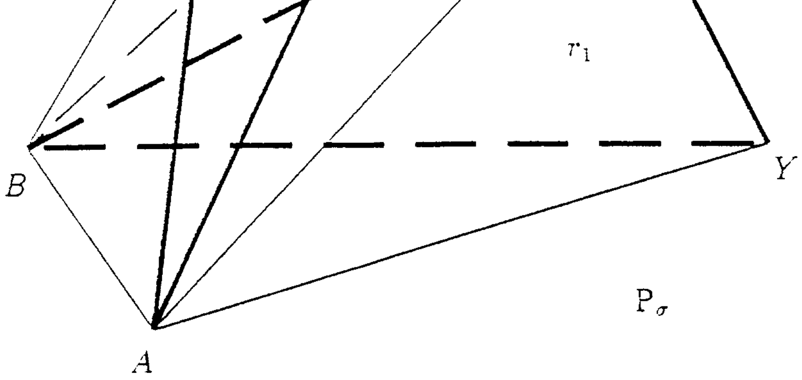
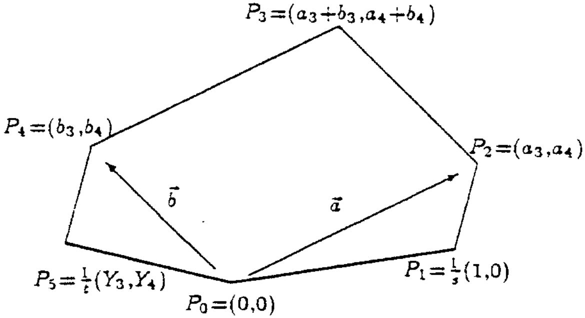
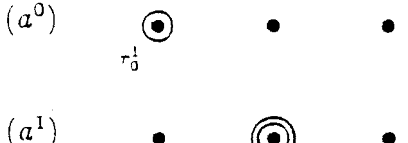
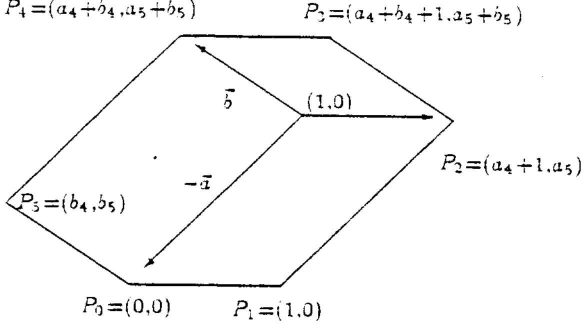
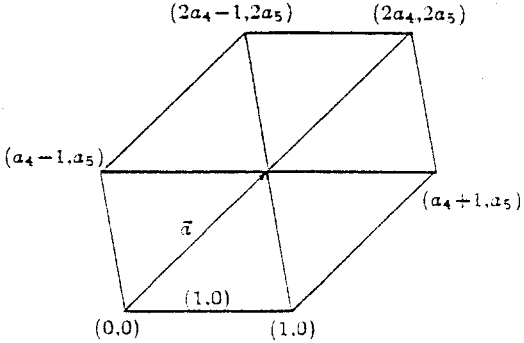

r_1
B
Y
P_σ
A

Figure 5.2

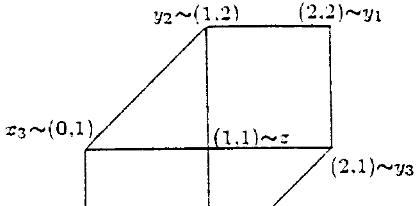

$P_3=(a_3+b_3,a_4+b_4)$
$P_4=(b_3,b_4)$
$P_2=(a_3,a_4)$
$\vec{b}$
$\vec{a}$
$P_5=\frac{1}{t}(Y_3,Y_4)$
$P_0=(0,0)$
$P_1=\frac{1}{s}(1,0)$


(a^0)
r_0^1
(a^1)


P4=(a4+b4,a5+b5)
P3=(a4+b4+1,a5+b5)
b⃗
(1,0)
P2=(a4+1,a5)
−a⃗
P5=(b4,b5)
P0=(0,0)
P1=(1,0)


(2a4−1,2a5)
(2a4,2a5)
(a4−1,a5)
(a4+1,a5)
a⃗
(1,0)
(0,0)
(1,0)

$a_5 > 0$;
$\gcd(a_4, a_5) = \gcd(a_4 - 1, a_5) = 1.$


y2∼(1,2)
(2,2)∼y1
x3∼(0,1)
(1,1)∼z
(2,1)∼y3