Corrections (2008.7.19)

Yoshio Yamaguchi, Radar Polarimetry from Basics to Applications :
Radar Remote Sensing Using Polarimetric Information (in Japanese),
IEICE, Dec. 2007
ISBN978-4-88552-227-7

p.8 3 lines from the bottom (in Japanese)
修正前:冬にはカナダのRADARSAT-2(C-band)も予定されている.
修正後:同年12月14日にはカナダのRADARSAT-2(C-band)が打ち上げられた.

Fig1.10 "PISA" → "Pi-SAR"

p.9 Table1. 4 RADARSAT-2 : launch 2007 → 2007.12

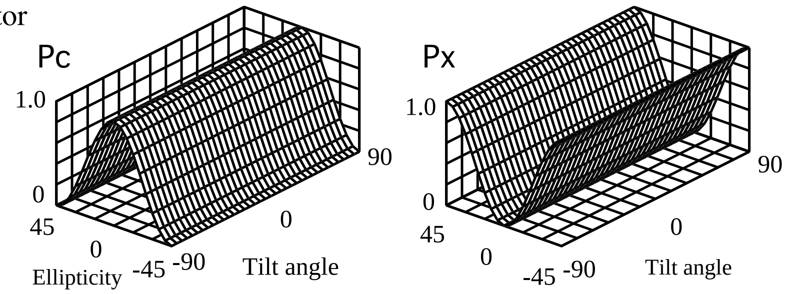
p.67 Some of letters and matrices in Fig. 3.21 should be replaced as

Letter

Trihedral Corner Reflector
Plate, Sphere

$$[S] = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

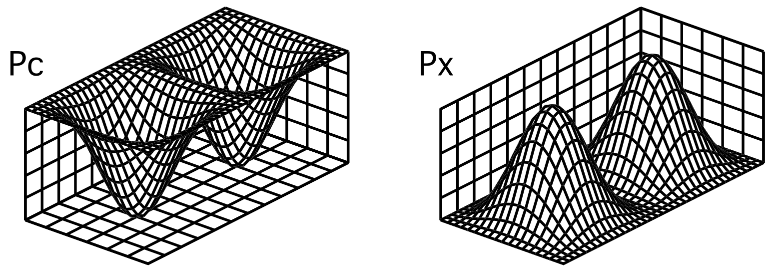
$$[K] = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$$



Dihedral Corner
Reflector

$$[S] = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

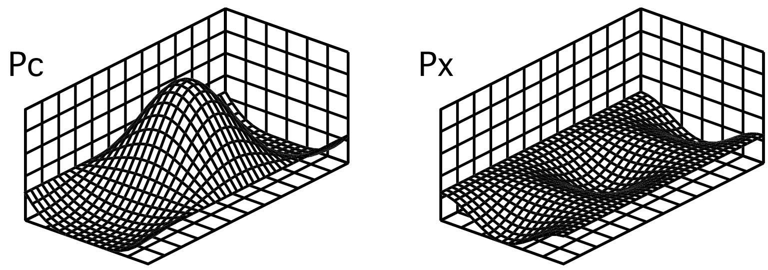
$$[K] = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$



Horizontal Dipole

$$[S] = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$$

$$[K] = \frac{1}{2}\begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$



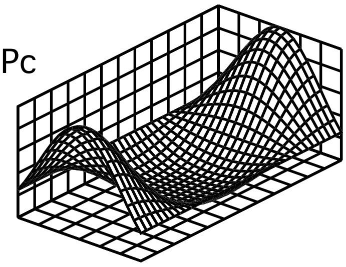
Corrections (2008.7.19)

Vertical Dipole

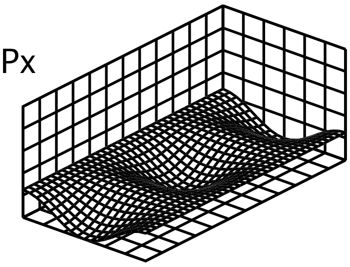
$$[S] = \begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$$

$$[K] = \frac{1}{2}\begin{bmatrix} 1 & -1 & 0 & 0 \\ -1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

Pc



Px

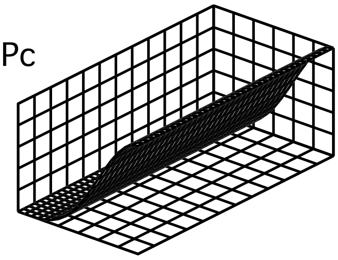


Left helix

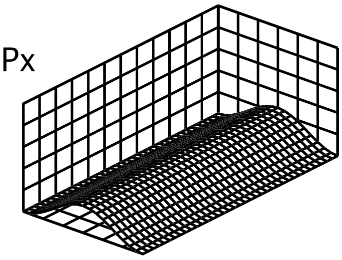
$$[S] = \frac{1}{2}\begin{bmatrix} 1 & j \\ j & -1 \end{bmatrix}$$

$$[K] = \frac{1}{2}\begin{bmatrix} 1 & 0 & 0 & -1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ -1 & 0 & 0 & 1 \end{bmatrix}$$

Pc



Px

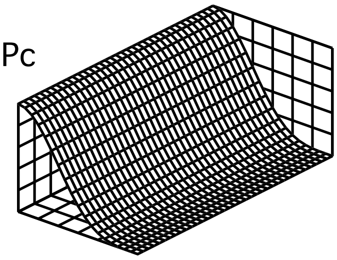


Right helix

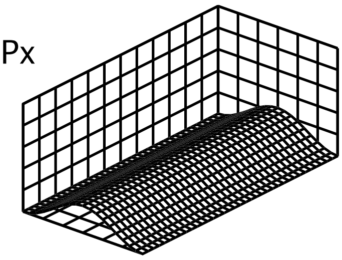
$$[S] = \frac{1}{2}\begin{bmatrix} 1 & -j \\ -j & -1 \end{bmatrix}$$

$$[K] = \frac{1}{2}\begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

Pc



Px



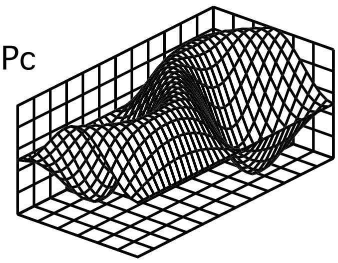
Matrix

$\frac{\lambda}{8}$ orthogonal Dipoles

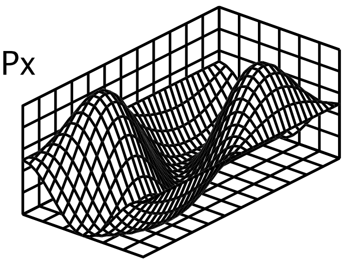
$$[S] = \begin{bmatrix} 1 & 0 \\ 0 & -j \end{bmatrix}$$

$$[K] = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

Pc



Px

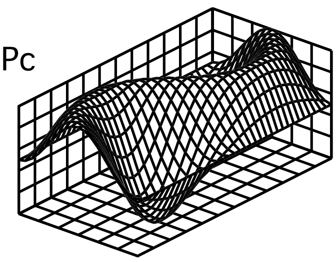


$-\frac{\lambda}{8}$ orthogonal Dipoles

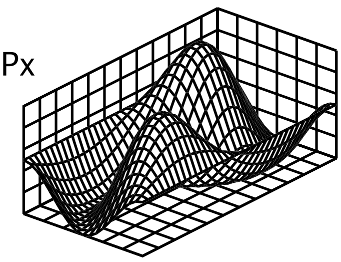
$$[S] = \begin{bmatrix} 1 & 0 \\ 0 & j \end{bmatrix}$$

$$[K] = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 0 & -1 & 0 \end{bmatrix}$$

Pc



Px



p.84 Eqns. (4.16a), (4.16b) should be read as

$$\lambda_1 = S_{AA} \quad \rho_1 = \frac{e^{j2\alpha}}{1+\rho_1\rho_1^*} \quad S_{HH} + 2\rho_1 S_{HV} + \rho_1^2 S_{VV}$$

Corrections (2008.7.19)

$$\lambda_2 = S_{BB}\left(\rho_1\right) = \frac{e^{-j2\alpha}}{1+\rho_1\rho_1^*}\left(\rho_1^{*2} S_{HH} - 2\rho_1^* S_{HV} + S_{VV}\right)$$

p.92 Eq.(4.48) $\frac{J}{2}(a+b) \Rightarrow \frac{j}{2}(a+b)$

Eq.(4.50)

$$\boldsymbol{k}_P = \frac{1}{\sqrt{2}}\begin{bmatrix} S_{HH}-S_{VV} \\ S_{HH}-S_{VV} \\ 2S_{HV}\end{bmatrix} \Rightarrow \boldsymbol{k}_P = \frac{1}{\sqrt{2}}\begin{bmatrix} S_{HH}+S_{VV} \\ S_{HH}-S_{VV} \\ 2S_{HV}\end{bmatrix}$$

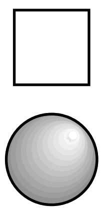
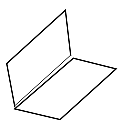
$$\boldsymbol{k}_P(\theta) = \begin{bmatrix} S_{hh}+S_{vv} \\ \frac{1}{\sqrt{2}} S_{hh}-S_{vv} \\ 2S_{hv}\end{bmatrix} \Rightarrow \boldsymbol{k}_P(\theta) = \frac{1}{\sqrt{2}}\begin{bmatrix} S_{hh}+S_{vv} \\ S_{hh}-S_{vv} \\ 2S_{hv}\end{bmatrix}$$

p.95 Eq. (4.61) should be

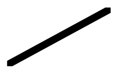
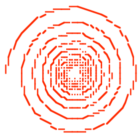
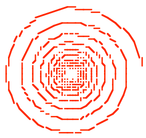
$$\langle [K(\theta)] \rangle =$$

$$\begin{bmatrix} \frac{1}{2}\left(|a|^2+2|c|^2+|b|^2\right) & 0 & 0 & \mathrm{Im}\left\{c^*(a-b)\right\} \\ 0 & \frac{1}{2}\left(|a|^2-2|c|^2+|b|^2\right) & 0 & 0 \\ 0 & 0 & |c|^2+\mathrm{Re}\ a b^* & \mathrm{Im}\ a b^* \\ \mathrm{Im}\left\{c^*(a-b)\right\} & 0 & \mathrm{Im}\ a b^* & |c|^2-\mathrm{Re}\ a b^* \end{bmatrix}$$

p.95 Table 4.4 should be read as

	Target	Covariance $\langle [C(\theta)] \rangle$	Coherency $\langle [T(\theta)] \rangle$	Kennaugh $\langle [K(\theta)] \rangle$
Plate, Sphere		$\frac{1}{2}\begin{bmatrix}1&0&1\\0&0&0\\1&0&1\end{bmatrix}$	$\begin{bmatrix}1&0&0\\0&0&0\\0&0&0\end{bmatrix}$	$\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&-1\end{bmatrix}$
Dihedral CR		$\frac{1}{4}\begin{bmatrix}1&0&-1\\0&2&0\\-1&0&1\end{bmatrix}$	$\frac{1}{2}\begin{bmatrix}0&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&-1&0\\0&0&0&1\end{bmatrix}$

Corrections (2008.7.19)

	Target	Covariance $\langle [C(\theta)] \rangle$	Coherency $\langle [T(\theta)] \rangle$	Kennaugh $\langle [K(\theta)] \rangle$
Dipole		$\frac{1}{8}\begin{bmatrix} 3 & 0 & 1 \\ 0 & 2 & 0 \\ 1 & 0 & 3 \end{bmatrix}$	$\frac{1}{4}\begin{bmatrix} 2 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	$\frac{1}{2}\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$
L-Helix		$\frac{1}{4}\begin{bmatrix} 1 & -j\sqrt{2} & -1 \\ j\sqrt{2} & 2 & -j\sqrt{2} \\ -1 & j\sqrt{2} & 1 \end{bmatrix}$	$\frac{1}{2}\begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & -j \\ 0 & j & 1 \end{bmatrix}$	$\frac{1}{2}\begin{bmatrix} 1 & 0 & 0 & -1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ -1 & 0 & 0 & 1 \end{bmatrix}$
R-Helix		$\frac{1}{4}\begin{bmatrix} 1 & j\sqrt{2} & -1 \\ -j\sqrt{2} & 2 & j\sqrt{2} \\ -1 & -j\sqrt{2} & 1 \end{bmatrix}$	$\frac{1}{2}\begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & j \\ 0 & -j & 1 \end{bmatrix}$	$\frac{1}{2}\begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$

p.115 Reference [11]
vol. E91-B, no.1, 2008 (in press) → vol. E91-B, no.1, pp. 297-301, 2008

p.117&118 Wrong
$$\begin{bmatrix} \cos\alpha_1 & \cos\alpha_2 & \cos\alpha_3 \\ \sin\alpha_1\cos\beta_1 e^{j\delta_1} & \sin\alpha_2\cos\beta_2 e^{j\delta_2} & \sin\alpha_3\cos\beta_3 e^{j\delta_3} \\ \sin\alpha_1\sin\beta_1 e^{j\delta_1} & \sin\alpha_2\sin\beta_2 e^{j\delta_2} & \sin\alpha_3\sin\beta_3 e^{j\delta_3} \end{bmatrix}$$

→ Right
$$\begin{bmatrix} \cos\alpha_1 & \cos\alpha_2 & \cos\alpha_3 \\ \sin\alpha_1\cos\beta_1 e^{j\delta_1} & \sin\alpha_2\cos\beta_2 e^{j\delta_2} & \sin\alpha_3\cos\beta_3 e^{j\delta_3} \\ \sin\alpha_1\sin\beta_1 e^{j\gamma_1} & \sin\alpha_2\sin\beta_2 e^{j\gamma_2} & \sin\alpha_3\sin\beta_3 e^{j\gamma_3} \end{bmatrix}$$

p.128 Fig. 8.3 $\frac{1}{2\pi}\sin\theta$ → $\frac{1}{2}\sin\theta$

p.178 Eq. (11.22) d → b $\begin{bmatrix} a & c \\ c & d \end{bmatrix} \Rightarrow \begin{bmatrix} a & c \\ c & b \end{bmatrix}$