1. 旋转矩阵

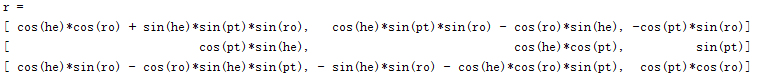
r =

[ cos(he)\*cos(ro) + sin(he)\*sin(pt)\*sin(ro), cos(he)\*sin(pt)\*sin(ro) - cos(ro)\*sin(he), -cos(pt)\*sin(ro)]

[ cos(pt)\*sin(he), cos(he)\*cos(pt), sin(pt)]

[ cos(he)\*sin(ro)-cos(ro)\*sin(he)\*sin(pt), - sin(he)\*sin(ro) - cos(he)\*cos(ro)\*sin(pt), cos(pt)\*cos(ro)]

r=[r1, r2, r3; r4, r5, r6; r7, r8, r9];



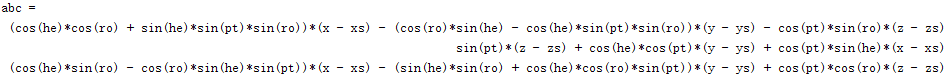
1. 基线向量

b=

[bx, by, bz]=

[x - xs, y - ys, z - zs]'

1. 中间表达式



A = r1\*bx + r2\*by + r3\*bz;

B = r4\*bx + r5\*by + r6\*bz;

C = r7\*bx + r8\*by + r9\*bz;

1. 共线方程

fx = atan(A/B) - theta;

fy = atan(sqrt(A^2 + B^2)/C) - psi;

1. 微分方程

vx = a11 \* dx + a12 \* dy + a13 \* dz + a14 \* droll + a15 \* dpitch + a16 \* dyaw – fx0

vy = a21 \* dx + a22 \* dy + a23 \* dz + a24 \* droll + a25 \* dpitch + a26 \* dyaw – fy0

其中：

定义：

tp1 = sin(pt)\*sin(ro);

tp2 = cos(he)\*cos(pt)\*sin(ro);

tp3 = cos(pt)\*sin(he)\*sin(ro);

tp4 = cos(he)\*sin(pt);

tp5 = cos(pt);

tp6 = sin(he)\*sin(pt);

tp7 = cos(ro)\*sin(pt);

tp8 = cos(he)\*cos(pt)\*cos(ro);

tp9 = cos(pt)\*cos(ro)\*sin(he);

tp10=C\*(A\*(tp1\*bz+tp2\*by+tp3\*bx)-B\*(tp4\*by-tp5\*bz+tp6\*bx));

tp11=(A^2+B^2 )\*(tp7\*bz+tp8\*by+tp9\*bx);

tp12=C\*(A\*(r2\*bx-r1\*by)+B\*(r5\*bx-r4\*by));

tp13=(A^2+B^2 )\*(-r8\*bx+r7\*by);

图像像素起点0

α

/\* 像空间坐标定义

\*\* x = r \* sin(psi) \* sin(theta)

\*\* y = r \* sin(psi) \* cos(theta)

\*\* z = r \* cos(psi)

\*/

其中：

其中：

其中：

其中：