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**合肥工业大学**

**实验报告**

**课 程：机器人足球仿真**

**专业班级：计科 17-1班**

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**一、实验目的**

根据以前的实验，设计出一支具有一定战术策略的机器人足球队。

**二、实验设备**

硬件环境：PC机

软件环境：操作系统linux

**三、实验内容**

按照小组的方法完成一支完整的仿真机器人足球队伍。

**四、实验过程和程序**

void leftSoccer(Robot \*robot,int rID)

{

double rx,ry,bx,by;

double dx,dy;

double bvd,bv;

double desX,desY;

double L; //活动边界

double revise;

revise = 5.0;

rx = robot->pos.x;

ry = robot->pos.y;

bx = ENV->currentBall.pos.x;

by = ENV->currentBall.pos.y;

dx = rx - bx;

dy = ry - by;

bvd = BALLVDIRECTION[0];

bv = BALLEV[0];

if(bv > 100 || l(rx,ry,bx,by) > 15)

predictBall(1/8);

else if(bv > 80 || l(rx,ry,bx,by) > 10)

predictBall(1/15);

else if(bv > 50 || l(rx,ry,bx,by) > 7)

predictBall(1/25);

else

predictBall(1/40);

if(l(rx,ry,bx,by) < 3)

predictBall(0.0);

if(WHO ==1)

{

L = 33.71 + revise;

if(by < L) //球在范围

{

if(rx > bx+ 2.5) //挨在球右边

{

if(fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2 && fabs(dy) < BALLD/2 + ROBOTWIDTH/2)

{

if(by < FBOT + ROBOTWIDTH)

{

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else

{

if(bx < 27.81)

turnKick(robot,rID,2);

else

sGo(robot,rID,GLEFT,(FTOP + FBOT)/2);

}

}

else

{

if(by < FBOT + ROBOTWIDTH)

sGo(robot,rID,bx,by + 1);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

}

else//在球左边

{

toBRight(robot,rID);

}

if(bx < FLEFTX + ROBOTWIDTH) //球到敌方底线

{

if(dy < -0.5 && dy > -3.0 && fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2)

{

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else if(dx > 1)

{

toBDown(robot,rID);

}

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx > 70.12) //回防

{

if(rx - bx > 2.5)

{

sGo(robot,rID,PBP[0] - 1,PBP[1]);

}

else

{

if(by < 27.89 - ROBOTWIDTH)

{

toBRight(robot,rID);

}

else

keeper(robot,rID,FRIGHTX - ROBOTWIDTH,27.89 - ROBOTWIDTH/2,180.0);

}

}

if(bx > FRIGHTX - ROBOTWIDTH) //球到我方底线

{

if(dy > 0.5 && dy < 2.5 && fabs(dx) < 1.2)

{

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,bx,by);

}

else if(dy > 0.5 && fabs(dx) < 1.8)

sGo(robot,rID,PBP[0],PBP[1]);

else if(dx < -1)

toBUp(robot,rID);

}

}

else if(by > L) //球不在范围

{

if(bvd > 180.0 && bvd < 360.0)

{

double k;

desY = 19.94;

k = tanf(bvd/180.0\*PI);

desX = fn(k,bx,by,desY);

desX += 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

else{

desY = 19.94;

desX = bx + 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

}

}

else{ //for yellow

L = 52.92 - revise;

if(by > L){ //球在范围

if(rx < bx -2.5){ //挨在球左边

if(fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2 && fabs(dy) < BALLD/2+ ROBOTWIDTH/2){

if(by > FTOP - ROBOTWIDTH){

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else{

if(bx > 70.12)

turnKick(robot,rID,4);

else

sGo(robot,rID,GRIGHT,(FTOP + FBOT)/2);

}

}

else{

if(by > FTOP - ROBOTWIDTH)

sGo(robot,rID,bx,by + 1);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

}

else{ //在球右边

toBLeft(robot,rID);

}

if(bx > FRIGHTX - ROBOTWIDTH){ //球到敌方底线

if(dy > 0.5 && dy < 3.0 && fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2){

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else if(dx < -1){

toBUp(robot,rID);

}

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx < 27.81){ //回防

if(rx - bx < -2.5){

sGo(robot,rID,PBP[0] + 1,PBP[1]);

}

else{

if(by > 58.56 + ROBOTWIDTH){

toBLeft(robot,rID);

}

else

keeper(robot,rID,FLEFTX + ROBOTWIDTH,58.56 +ROBOTWIDTH/2,180.0);

}

}

if(bx < FLEFTX + ROBOTWIDTH){ //球到我方底线

if(dy < -0.5 && dy > -2.5 && fabs(dx) < 1.2){

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,bx,by);

}

else if(dy < -0.5 && fabs(dx) < 1.8)

sGo(robot,rID,PBP[0],PBP[1]);

else //if(dx < -1)

toBDown(robot,rID);

}

}

else if(by < L){ //球不在范围

if(bvd < 180.0 && bvd > 0.0){

double k;

desY = 66.39;

k = tanf(bvd/180.0\*PI);

desX = fn(k,bx,by,desY);

desX -= 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

else{

desY = 66.39;

desX = bx - 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

}

}

}

void middleSoccer(Robot \*robot,int rID){

double rx,ry,bx,by;

double dx,dy;

double bvd,bv;

double desX,desY;

double L; //活动边界

double R; //活动边界

double revise;

revise = 5.0;

rx = robot->pos.x;

ry = robot->pos.y;

bx = ENV->currentBall.pos.x;

by = ENV->currentBall.pos.y;

dx = rx - bx;

dy = ry - by;

bvd = BALLVDIRECTION[0];

bv = BALLEV[0];

if(bv > 100 || l(rx,ry,bx,by) > 15)

predictBall(1/8);

else if(bv > 80 || l(rx,ry,bx,by) > 10)

predictBall(1/15);

else if(bv > 50 || l(rx,ry,bx,by) > 7)

predictBall(1/25);

else

predictBall(1/40);

if(l(rx,ry,bx,by) < 3)

predictBall(0.0);

if(WHO ==1){

L = 27.89 - revise;

R = 58.56 + revise;

if(by < L || by > R){ //范围外

if(by < L){

if(bvd > 0 && bvd < 180.0){

double k;

k = tanf(bvd/180.0\*PI);

desY = 43.00;

desX = fn(k,bx,by,desY);

desX += 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

else{

desY = 43.00;

desX = bx + 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

}

else{ //by >R

if(bvd > 180.0 && bvd < 360.0){

double k;

k = tanf(bvd/180.0\*PI);

desY = 43.00;

desX = fn(k,bx,by,desY);

desX += 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

else{

desY = 43.00;

desX = bx + 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

}

}

else{ //在范围

if(rx < bx + 2.5)

toBRight(robot,rID);

else{

if(fabs(dy) < 1.5)

sGo(robot,rID,GLEFT,(FTOP + FBOT)/2);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx > 88.28)

run(robot,rID,0,0);

else if(bx < 88.28 && bx > 80.43){

if(rx > bx && fabs(dy) > 3)

sGo(robot,rID,PBP[0],PBP[1]);

else

run(robot,rID,0,0);

}

else if(bx < 11.95){

if(by > 33.93 && by < 49.68)

sTo(robot,rID,PBP[0],PBP[1]);

else

sTo(robot,rID,20.69,43.00);

}

}

}

else{ //for yellow

R = 27.89 - revise;

L = 58.56 + revise;

if(by > L || by < R){ //范围外

if(by > L){

if(bvd < 360.0 && bvd > 180.0){

double k;

k = tanf(bvd/180.0\*PI);

desY = 43.00;

desX = fn(k,bx,by,desY);

desX -= 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

else{

desY = 43.00;

desX = bx - 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

}

else{ //by >R

if(bvd < 180.0 && bvd > 0.0){

double k;

k = tanf(bvd/180.0\*PI);

desY = 43.00;

desX = fn(k,bx,by,desY);

desX -= 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

else{

desY = 43.00;

desX = bx - 3\*ROBOTWIDTH;

if(desX > 80.43)

desX = 80.43;

if(desX < 19.80)

desX = 19.80;

sTo(robot,rID,desX,desY);

}

}

}

else{ //在范围

if(rx > bx - 2.5)

toBLeft(robot,rID);

else{

if(fabs(dy) < 1.5)

sGo(robot,rID,GRIGHT,(FTOP + FBOT)/2);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx < 11.95)

run(robot,rID,0,0);

else if(bx > 11.95 && bx < 17.69){

if(rx < bx && fabs(dy) > 3)

sGo(robot,rID,PBP[0],PBP[1]);

else

run(robot,rID,0,0);

}

else if(bx > 88.28){

if(by > 33.93 && by < 49.68)

sTo(robot,rID,PBP[0],PBP[1]);

else

sTo(robot,rID,79.55,43.00);

}

}

}

}

void rightSoccer(Robot \*robot,int rID){

double rx,ry,bx,by;

double dx,dy;

double bvd,bv;

double desX,desY;

double R; //活动边界

double revise;

revise = 5.0;

rx = robot->pos.x;

ry = robot->pos.y;

bx = ENV->currentBall.pos.x;

by = ENV->currentBall.pos.y;

dx = rx - bx;

dy = ry - by;

bvd = BALLVDIRECTION[0];

bv = BALLEV[0];

if(bv > 100 || l(rx,ry,bx,by) > 15)

predictBall(1/8);

else if(bv > 80 || l(rx,ry,bx,by) > 10)

predictBall(1/15);

else if(bv > 50 || l(rx,ry,bx,by) > 7)

predictBall(1/25);

else

predictBall(1/40);

if(l(rx,ry,bx,by) < 3)

predictBall(0.0);

if(WHO ==1){

R = 52.92 -revise;

if(by > R){ //球在范围

if(rx > bx+2.5){ //挨在球右边

if(fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2 && fabs(dy) < BALLD/2+ ROBOTWIDTH/2){

if(by > FTOP - ROBOTWIDTH){

if(hasEnemyNear(bx,by))

turn(robot,rID,-1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else{

if(bx < 27.81)

turnKick(robot,rID,3);

else

sGo(robot,rID,GLEFT,(FTOP + FBOT)/2);

}

}

else{

if(by > FTOP - ROBOTWIDTH)

sGo(robot,rID,PBP[0],PBP[1] - 1);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

}

else{ //在球左边

toBRight(robot,rID);

}

if(bx < FLEFTX + ROBOTWIDTH){ //球到敌方底线

if(dy > 0.5 && dy < 3.0 && fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2){

if(hasEnemyNear(bx,by))

turn(robot,rID,-1);

else

sGo(robot,rID,PBP[0],PBP[1] + 1);

}

else if(dx > 1){

toBUp(robot,rID);

}

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx > 70.12){ //回防

if(rx - bx > 2.5){

sGo(robot,rID,PBP[0] - 1,PBP[1]);

}

else{

if(by > 52.92 + ROBOTWIDTH){

toBDown(robot,rID);

}

else

keeper(robot,rID,FRIGHTX-ROBOTWIDTH,52.92 +ROBOTWIDTH/2,180.0);

}

}

if(bx > FRIGHTX - ROBOTWIDTH){ //球到我方底线

if(dy < -0.5 && dy >- 2.5 && fabs(dx) < 1.2){

if(hasEnemyNear(bx,by))

turn(robot,rID,-1);

else

sGo(robot,rID,PBP[0] -1.0,PBP[1]);

}

else if(dy < -0.5 && fabs(dx) < 1.8)

sGo(robot,rID,PBP[0] -1.0,PBP[1]);

else //if(dx < -1)

toBDown(robot,rID);

}

}

else if(by < R){ //球不在范围

if(bvd > 0.0 && bvd < 180.0){

double k;

desY = 66.39;

k = tanf(bvd/180.0\*PI);

desX = fn(k,bx,by,desY);

desX += 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

else{

desY = 66.39;

desX = bx + 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

}

}

else{

R = 33.71 + revise;

if(by < R){ //球在范围

if(rx < bx - 2.5){ //挨在球左边

if(fabs(dx) < BALLD/2 + sqrt(2)\*ROBOTWIDTH/2 && fabs(dy) < BALLD/2+ ROBOTWIDTH/2){

if(by < FBOT + ROBOTWIDTH){

if(hasEnemyNear(bx,by))

turn(robot,rID,-1);

else

sGo(robot,rID,PBP[0],PBP[1] - 1);

}

else{

if(bx > 70.12)

turnKick(robot,rID,2);

else

sGo(robot,rID,GRIGHT,(FTOP + FBOT)/2);

}

}

else{

if(by < FBOT + ROBOTWIDTH)

sGo(robot,rID,PBP[0],PBP[1] + 1);

else

sGo(robot,rID,PBP[0],PBP[1]);

}

}

else{ //在球右边

toBLeft(robot,rID);

}

if(bx > FRIGHTX - ROBOTWIDTH){ //球到敌方底线

if(dy < -0.5 && dy > -3.0 && fabs(dx) < BALLD/2 +sqrt(2)\*ROBOTWIDTH/2){

if(hasEnemyNear(bx,by))

turn(robot,rID,1);

else

sGo(robot,rID,PBP[0],PBP[1] - 1);

}

else if(dx < -1){

toBDown(robot,rID);

}

else

sGo(robot,rID,PBP[0],PBP[1]);

}

if(bx < 27.81){ //回防

if(rx - bx < -2.5){

sGo(robot,rID,PBP[0] + 1,PBP[1]);

}

else{

if(by < 27.89 - ROBOTWIDTH){

toBUp(robot,rID);

}

else（keeper(robot,rID,FLEFTX + ROBOTWIDTH,27.89 -ROBOTWIDTH/2,180.0);

}

}

if(bx < FLEFTX + ROBOTWIDTH){ //球到我方底线

if(dy > 0.5 && dy < 3 && fabs(dx) < 1.2){

if(hasEnemyNear(bx,by))

turn(robot,rID,-1);

else

sGo(robot,rID,PBP[0] + 1.0,PBP[1]);

}

else if(dy < 0.5 && fabs(dx) < 1.8)

sGo(robot,rID,PBP[0] + 1.0,PBP[1]);

else //if(dx < -1)

toBUp(robot,rID);

}

}

else if(by > R){ //球不在范围

if(bvd > 180.0 && bvd < 360.0){

double k;

desY = 19.94;

k = tanf(bvd/180.0\*PI);

desX = fn(k,bx,by,desY);

desX -= 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

else{

desY = 19.94;

desX = bx - 3\*ROBOTWIDTH;

if(desX > 70.12)

desX = 70.12;

if(desX < 27.81)

desX = 27.81;

sTo(robot,rID,desX,desY);

}

}

}

}

void backSoccer(Robot \*robot,int rID){

//

double rx,ry,bx,by;

double dx,dy;

double bvd,bv;

double desX,desY;

double B; //活动边界

rx = robot->pos.x;

ry = robot->pos.y;

bx = ENV->currentBall.pos.x;

by = ENV->currentBall.pos.y;

dx = rx - bx;

dy = ry - by;

bvd = BALLVDIRECTION[0];

bv = BALLEV[0];

if(WHO ==1){

B = 60.27;

if(bx < B){ //attack

if(bx > 19.80){ //19.80--60.27

if(bvd < 90.0 || bvd > 270.0){

double k;

desX = B;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else

keeper(robot,rID,B,by,90.0);

if(dx > 0 && dx < ROBOTWIDTH + 1)

{

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,3);

else

turnKick(robot,rID,2);

}

}

else

{

if(bvd < 90.0 || bvd > 270.0)

{

double k;

desX = 37.20;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else

keeper(robot,rID,37.20,by,90.0);

if(dx > 0 && dx < ROBOTWIDTH + 1){

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,3);

else

turnKick(robot,rID,2);

}

}

}

else{ //defend

if(bx < 88.28 - ROBOTWIDTH){ //60.27--88.28 - ROBOTWIDTH

if(bvd < 90.0 || bvd > 270.0){

double k;

desX = 88.28 - ROBOTWIDTH;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else{

if(by > (FTOP + FBOT)/2)

keeper(robot,rID,88.28-ROBOTWIDTH,by -+2\*ROBOTWIDTH,90.0);

else

keeper(robot,rID,88.28-ROBOTWIDTH,by+2\*ROBOTWIDTH,90.0);

}

if(dx > 0 && dx < ROBOTWIDTH + 1){

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,3);

else

turnKick(robot,rID,2);

}

}

else{ //88.28 - ROBOTWIDTH--

if(by > (FTOP + FBOT)/2)

sTo(robot,rID,FRIGHTX - ROBOTWIDTH,66.39);

else

sTo(robot,rID,FRIGHTX - ROBOTWIDTH,19.94);

}

}

}

else{

B = 37.20;

if(bx > B){ //attack

if(bx < 80.43){ //37.20--80.43

if(bvd > 90.0 && bvd < 270.0){

double k;

desX = B;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else

keeper(robot,rID,B,by,90.0);

if(dx < 0 && dx > -1\*(ROBOTWIDTH + 1)){

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,4);

else

turnKick(robot,rID,1);

}

}

else{ // 80.43---

if(bvd > 90.0 && bvd < 270.0){

double k;

desX = 60.27;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else

keeper(robot,rID,60.27,by,90.0);

if(dx < 0 && dx < -1\*(ROBOTWIDTH + 1)){

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,4);

else

turnKick(robot,rID,1);

}

}

}

else

{

if(bx > 11.95 + ROBOTWIDTH)

{

if(bvd > 90.0 && bvd < 270.0)

{

double k;

desX = 11.95 + ROBOTWIDTH;

k = tanf(bvd/180.0\*PI);

desY = f(k,bx,by,desX);

if(desY > FTOP - ROBOTWIDTH)

desY = FTOP - ROBOTWIDTH;

else if(desY < FBOT + ROBOTWIDTH)

desY = FBOT + ROBOTWIDTH;

keeper(robot,rID,desX,desY,90.0);

}

else

{

if(by > (FTOP + FBOT)/2)

keeper(robot,rID,11.95 + ROBOTWIDTH,by - 2\*ROBOTWIDTH,90.0);

else

keeper(robot,rID,11.95 + ROBOTWIDTH,by +2\*ROBOTWIDTH,90.0);

}

if(dx < 0 && dx > -1\*(ROBOTWIDTH + 1)){

if(by > (FTOP + FBOT)/2)

turnKick(robot,rID,4);

else

turnKick(robot,rID,1);

}

}

else{

if(by > (FTOP + FBOT)/2)

sTo(robot,rID,FLEFTX + ROBOTWIDTH,66.39);

else

sTo(robot,rID,FLEFTX + ROBOTWIDTH,19.94);

}

}

}

}

**五、实验心得**

这次的实验是要求设计出一支具有一定战略策略的机器人足球队。通过前几次的实验课程，我学习了有关机器人足球队的基础知识。本次实验中，deMeer5是球员的策略函数。根据实验所学的简单的策略：如果球可踢，就用最大力量踢球；如果球不可踢并且我可以最快到达球，就去接球。同时球可踢的时候还可以进行带球的动作。在实验过程中，我们不知道怎样把球传给队友，通过查找课本和讨论，我们可以通过把函数的参数设置传球的对象。还有根据体力值设置带球速度等。  
 虽然这次实验内容很复杂，也遇到了不少困难，但是通过讨论与查找，我们克服了困难。这次实验，加深了我们对机器人足球赛的理解，也让我们更好的运用了所学的知识。