double[] s = new double[sd.Length - 1]; //存取距离

double sums= 0; //距离总和

double[] xzl = new double[sd.Length - 1];

double sumxzl = 0;

double[] yzl = new double[sd.Length - 1];

double sumyzl = 0;

for (int i=1;i<s.Length;i++)

{

s[i] = Convert.ToDouble(dataGridView1.Rows[i].Cells[5].Value);

//将观测距离放到s数组中

sums += s[i]; //计算距离总和

xzl[i] = s[i] \* Math .Cos (cr[i]); //利用距离和坐标方位角计算坐标增量

yzl[i] = s[i] \* Math .Sin (cr[i]);

sumxzl += xzl[i]; //计算坐标增量总和

sumyzl += yzl[i];

dataGridView1.Rows[i].Cells[6].Value = Convert.ToString(Math.Round (xzl[i],3));

//将坐标增量放入表格

dataGridView1.Rows[i].Cells[7].Value = Convert.ToString(Math.Round (yzl[i],3));

}

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[5].Value = Convert.ToString(sums);

//将距离总和放入表格中

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[6].Value = Convert.ToString(Math .

Round (sumxzl,3)); //将坐标增量总和放入表格中

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[7].Value =

Convert.ToString(Math.Round(sumyzl,3));

double xa, ya, xb, yb; //存放已知两个点的x，y坐标

xa = Convert.ToDouble(dataGridView1.Rows[1].Cells[12].Value);

ya = Convert.ToDouble(dataGridView1.Rows[1].Cells[13].Value);

xb = Convert.ToDouble(dataGridView1.Rows[sd.Length - 1].Cells[12].Value);

yb = Convert.ToDouble(dataGridView1.Rows[sd.Length - 1].Cells[13].Value);

double xbhc, ybhc, xybhc, k1;

xbhc = sumxzl - (xb- xa); //计算坐标增量闭合差

ybhc = sumyzl - (yb - ya);

xybhc = Math.Sqrt(xbhc \* xbhc + ybhc \* ybhc); //计算导线全长闭合差

k1 = sums / xybhc; //计算导线全长相对闭合差分母

dataGridView1.Rows[dataGridView1.RowCount - 3].Cells[7].Value =

Convert.ToString(Math.Round(xbhc,3));

dataGridView1.Rows[dataGridView1.RowCount - 2].Cells[7].Value =

Convert.ToString(Math.Round(ybhc,3));

dataGridView1.Rows[dataGridView1.RowCount - 3].Cells[10].Value =

Convert.ToString(Math.Round(xybhc, 3));

dataGridView1.Rows[dataGridView1.RowCount - 2].Cells[11].Value =

Convert.ToString((int)k1);//导线全长相对闭合差分母取整 导线全长相对闭合差；1/整数

double[] vx = new double[sd.Length - 1]; //定义数组用于存放坐标增量的改正数及总和

double[] vy = new double[sd.Length - 1];

double sumvx = 0;

double sumvy = 0;

double[] cx = new double[sd.Length - 1]; //定义数组用于存放改正后的坐标增量及总和

double[] cy = new double[sd.Length - 1];

double sumcx = 0;

double sumcy = 0;

double[] x = new double[sd.Length - 1]; //定义数组用于存放x，y坐标

double[] y = new double[sd.Length - 1];

x[1] = xa;

y[1] = ya;

if (k1 < 2000) //判断导线全长相对闭合差是否超限

MessageBox.Show("导线全长相对闭合差超限！");

else

{

for(int m=1;m<vx.Length;m++)

{

vx[m] = -xbhc \* s[m] / sums; //计算坐标增量改正数

vy[m] = -ybhc \* s[m] / sums;

sumvx += vx[m]; //计算坐标增量改正数总和

sumvy += vy[m];

dataGridView1.Rows[m].Cells[8].Value = Convert.ToString(Math.Round(vx[m], 4));

//将坐标增量改正数放入表格

dataGridView1.Rows[m].Cells[9].Value = Convert.ToString(Math.Round(vy[m], 4));

cx[m] = xzl[m] + vx[m]; //计算改正后坐标增量

cy[m] = yzl[m] + vy[m];

sumcx += cx[m]; //计算改正后坐标增量总和

sumcy += cy[m];

dataGridView1.Rows[m].Cells[10].Value = Convert.ToString(Math.Round(cx[m], 3));

//将改正后坐标增量放入表格

dataGridView1.Rows[m].Cells[11].Value = Convert.ToString(Math.Round(cy[m], 3));

}

//C#中 1/2000 = 0 两个整数相除，可以写 成1.0/2000 保留小数位数

if (Math.Round(sumvx, 4) != Math.Round(-xbhc, 4) || Math.Round(sumvy, 4) !=

Math.Round(-ybhc, 4))

MessageBox.Show("坐标增量分配有误！");

if (Math.Round(sumcx, 4) != Math.Round(xb - xa, 4) || Math.Round(sumcy, 4) != Math.Round(yb - ya, 4))

MessageBox.Show("改正后坐标增量计算有误！");

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[8].Value =

Convert.ToString(Math.Round(sumvx, 3)); //将坐标增量改正数总和放入表格中

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[9].Value =

Convert.ToString(Math.Round(sumvy, 3));

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[10].Value =

Convert.ToString(Math.Round(sumcx, 3)); //将改正后坐标增量总和放入表格中

dataGridView1.Rows[dataGridView1.RowCount - 4].Cells[11].Value =

Convert.ToString(Math.Round(sumcy, 3));

for(int m=1;m<x.Length -1;m++ )

{

x[m + 1] = x[m] + cx[m]; //计算x,y坐标

y[m + 1] = y[m] + cy[m];

dataGridView1.Rows[m+1].Cells[12].Value= Convert.ToString(Math.Round(x[m+1], 3));

//将x,y坐标放入表格

dataGridView1.Rows[m+1].Cells[13].Value= Convert.ToString(Math.Round(y[m+1], 3));

}

if(Math.Round (x[x.Length -1]+cx[cx.Length -1],3)!=Math.Round (xb,3) || Math.Round

(y[y.Length -1]+cy[cy.Length -1],3)!=Math .Round ( yb,3))

MessageBox.Show("坐标计算有误！");

}