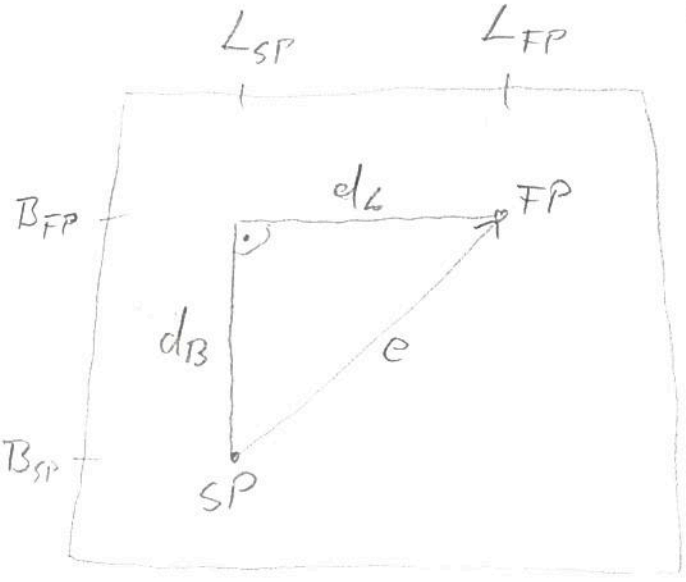
calculate Leg

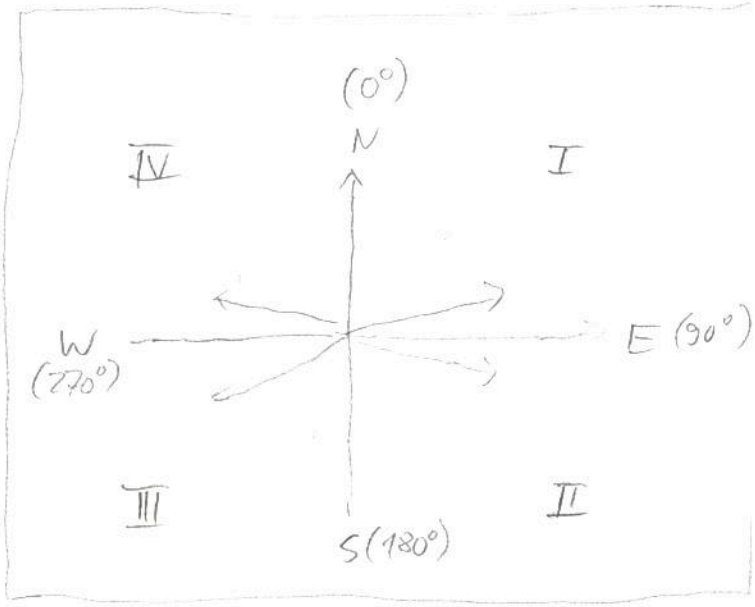
SP – Startpunkt
FP – Finishpunkt
lat B – Breite
lon L – Länge
D – Differenz (°)
d – Differenz (NM)
e – Entfernung (NM)
k – Kurs (°)



Breit: 90° S → 90° N ⇒ −90° … 90° N
Läng 180° W → 180° E ⇒ −180° … 180° E

latDiff $D_B = B_{FP} - B_{SP}$
lonDiff $D_L = L_{FP} - L_{SP}$

$$e = \sqrt{d_B^2 + d_L^2}$$



$d_B = 0$ $d_L > 0$ $k = 90°$
$d_L < 0$ $k = 270°$

$d_L = 0$ $d_B > 0$ $k = 0°$
$d_B < 0$ $k = 180°$

I $d_B > 0$ $d_L > 0$ $k = \arctan \frac{d_L}{d_B}$
II $d_B < 0$ $d_L > 0$ $k = 180° + \arctan \frac{d_L}{d_B}$
III $d_B \leq 0$ $d_L < 0$ $k = 180° + \arctan \frac{d_L}{d_B}$
IV $d_B > 0$ $d_L < 0$ $k = 360° + \arctan \frac{d_L}{d_B}$

d_L	d_B	k
10	1	84°
10	−1	95°
−10	1	264°
10	1	275°

latDis $d_B = 60\,NM \cdot D_B$

lonDis $d_L = a \cdot 60\,NM \cdot D_L$

$$a = \cos\left(\frac{B_{FP} + B_{SP}}{2}\right)$$