**2.6 Worksheet: Extrapolating position with distance and bearing**

Let us assume that the ice will keep moving at the same speed and in the same direction as it did over the last day. Where will the ice drift to in a day’s time?

Assume the ice will keep drifting with the same bearing and speed of the previous day. Calculate the meridional and zonal distance it will travel.

From these two distances find the number of degrees latitude and degrees longitude the ice moved. Add these to the start position to estimate where the ice will be in one day. Points for discussion.

How accurate do you think your forecast is?

How will you test this?

Let’s see tomorrow where the buoy moved to.

The figures below can be used to visualize the path of the ice.

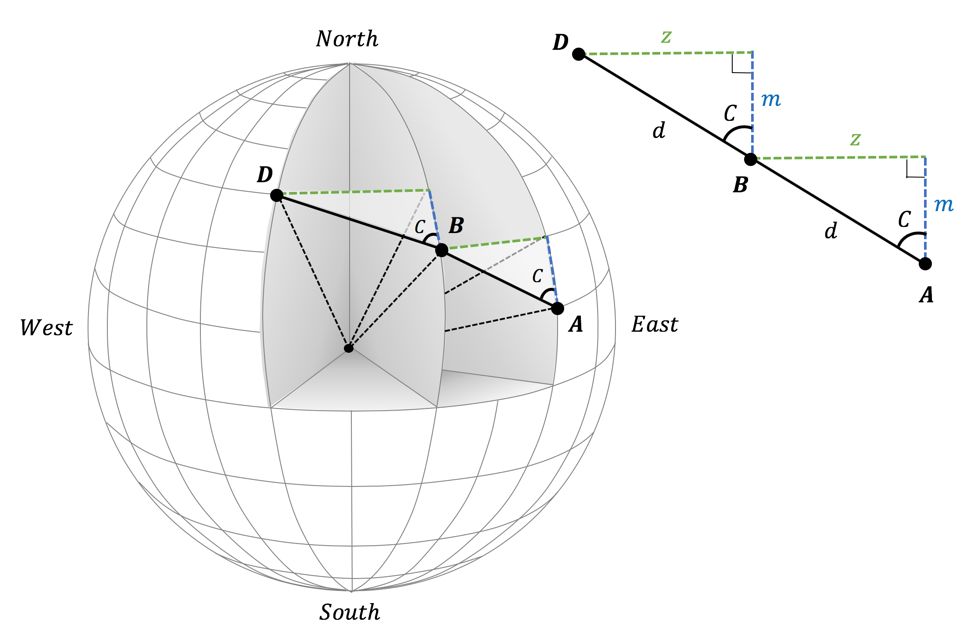
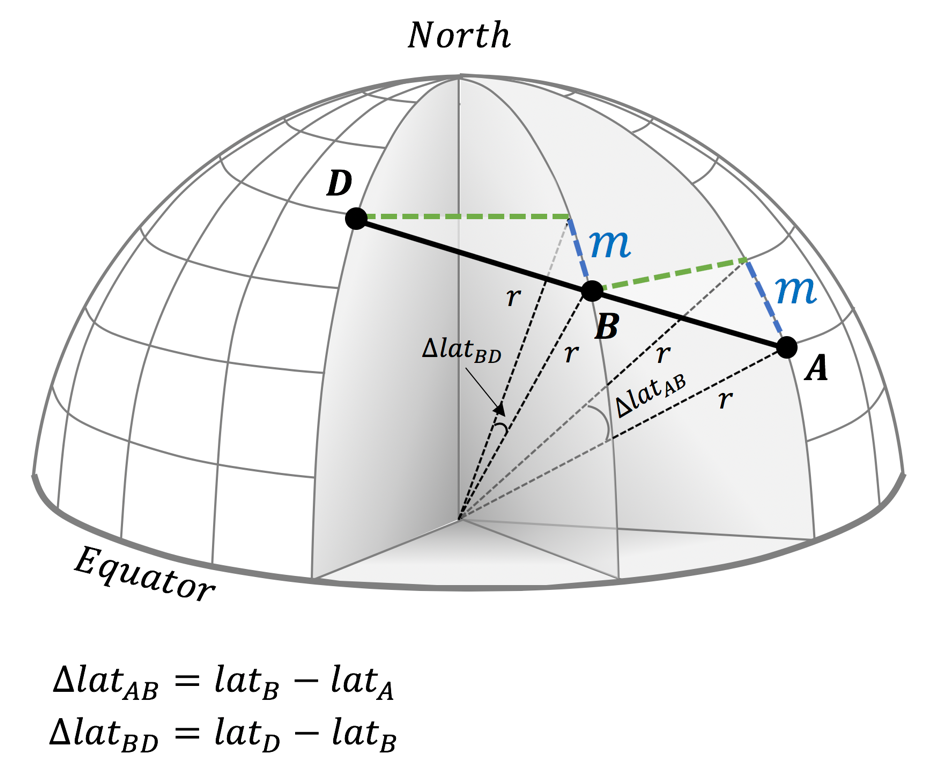
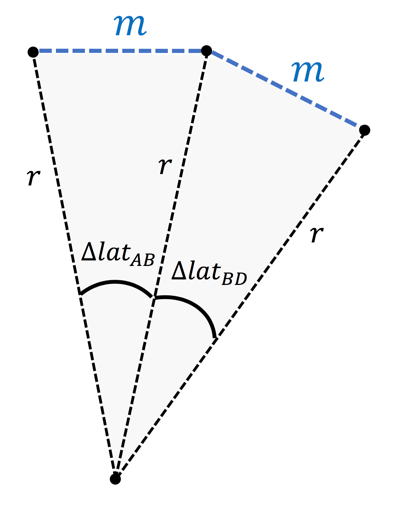


Figure 1: Depiction of the path traveled by the ice from point A () to point B (in one day and ultimately to point D () the following day. By knowing the latitude and longitude of the ice at points A and B, as well as the distance,, traveled and direction, , of the ice motion between these points over the first day, the location of the ice the following day (D) can be estimated.



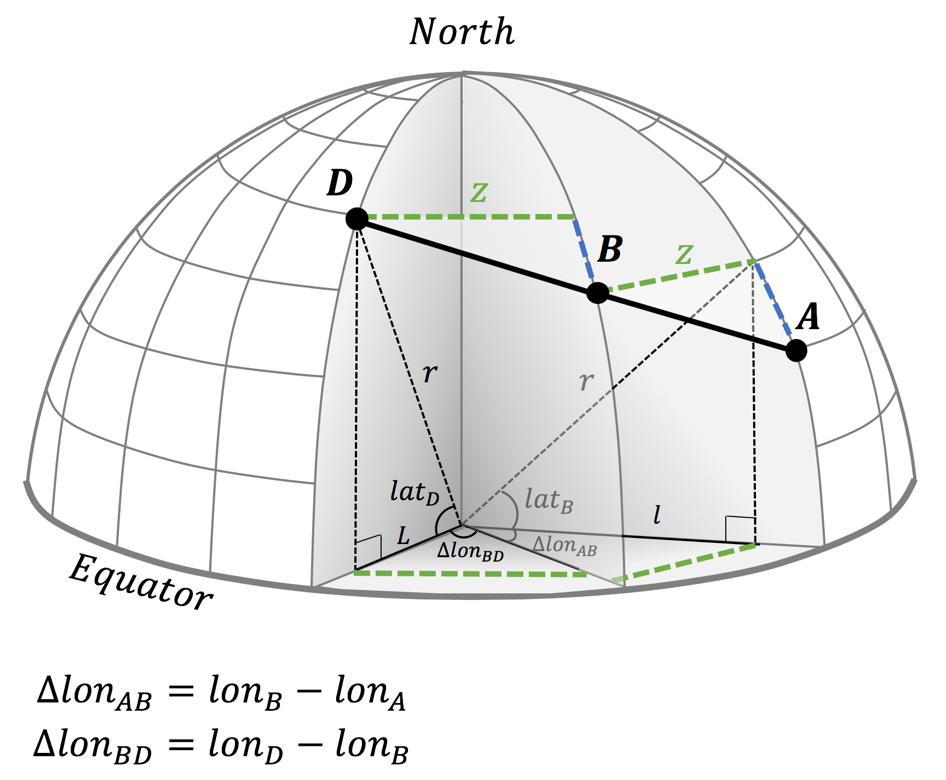
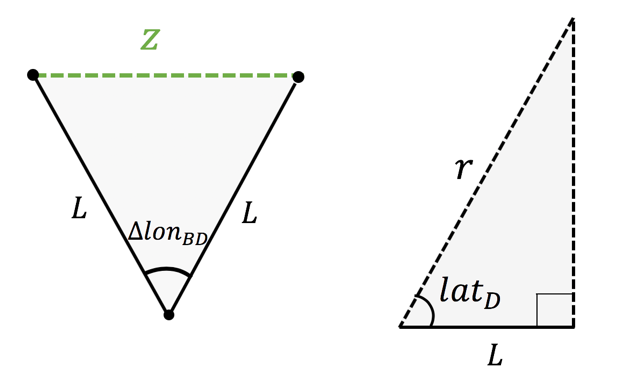
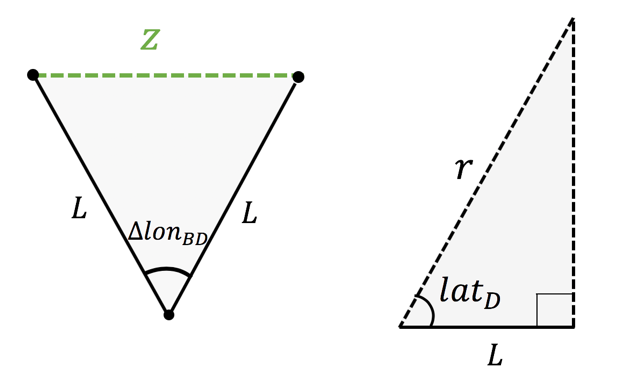
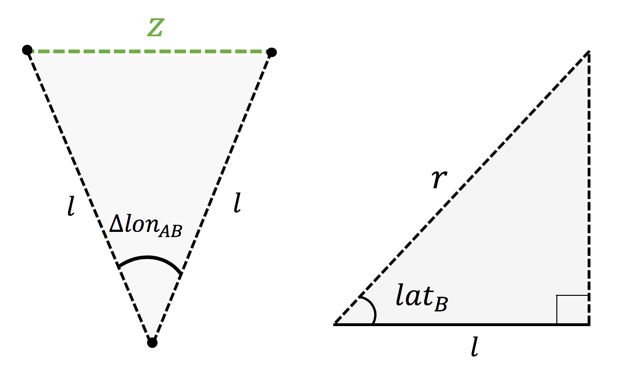


Figure 2: Path geometry that is useful for calculating distance and bearing of ice motion.