A blue and red dots

Description automatically generated

The comparison of environmental samples with blank samples indicates that there is no overlap between the two. This means that the workflow has been relatively clean apart from a few samples here and there (the red samples that are near the sample centroids).

There is some valuable information here and that is why I kept this plot. Having so many samples as we have for this region (Balsfjord – Bergsfjord) over different years and season can lead us to know when “future” blank samples are contaminated or not depending on where the samples are on the multivariate space, i.e., close to environmental samples centroids means that blanks are contaminated and vice versa.

A diagram of a group of dots

Description automatically generated with medium confidence

I did the same comparison but for using presence/absence and the distinction between the environmental samples and blank samples is harder to draw indicating once more that P/A preforms less efficient in these regions due to ubiquitous fish species and also that eDNA metabarcoding holds some sort of information regarding quantities.

A diagram of a network

Description automatically generated with medium confidence

Looking at the year effect it doesn’t seem like a significant effect. Although the centroids change the variation is higher than the centroid change. This indicates that there’s higher variability within the year than between years. Can that be a season effect or location effect we can’t know from this plot. See the plots below for investigating what is causing this variation.

A graph of a number of groups

Description automatically generated

This is a very interesting plot as it shows the distribution of distances to the group centroid. The color shows different grouping. For example, All (black) indicates no grouping and that shows the variability of the community composition among all years, seasons, location, stations, and depth. The higher the distance to the centroid the higher the variability thus lower distances indicate low variability in composition. Having decreasing variability with addition of hierarchical grouping indicates that such groups explain the variability. For example, grouping by Year (skyblue) has lower distance on average thus explain some part of the variability in the entire data (All). This logic follows for all the sub-grouping.

The results here, in conjunction with the previous plot indicate that Year-Season and Year-Location has the same effect thus explains the same variability. This indicates that Year-Season-Location explain more variability. This is not a significant indication as mathematically distances will always be lower when sub-grouping, but this is not always the case. If the distance does not decrease with the increase in sub-grouping it means that the sub-grouping does not explain the variability.