GARGOT

Discontinuities characterization

1. Consider the data in the excel file, collected in a basalt quarry using the scan-line method. For each discontinuity, the following information was recorded:
   - Dip and dip/direction
   - Distance to the origin of the survey
   - Roughness
   - Trend and plunge of each of the scan-lines (correspondent to different orientations of the faces in the rock mass)
   - The joints collected on each face

   a) Insert all the data in DIPS to obtain the diagram of the main sets of joints, with Terzaghi correction (considering the traverses given)

   b) Determine the RQD, the joint spacing and the joint frequency

   c) Using RocData software, obtain the mechanical parameters for the rock mass

   d) Admit that a circular section tunnel with 5 m diameter is planned to be excavated in the rock mass. Define the measures of support you would apply, using a safety factor of 2. The rock mass discontinuities have cohesion **nule**. **The tunnel is excavated with plunge/trend of 0º/090º.**

2. Regarding the rock mass that you are visiting in Serra da Arrábida, **explain**:

   a) The main mass movement that happens in the cliffs

   b) The support measures that you can identify in the images below (how each of them works, which is the aims on each case), indicating the designation on each picture.