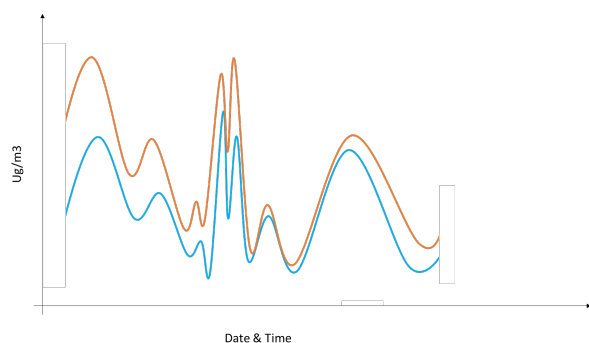


## How can AQMesh PM1 readings be higher than PM2.5 or PM2.5 read higher than PM10?

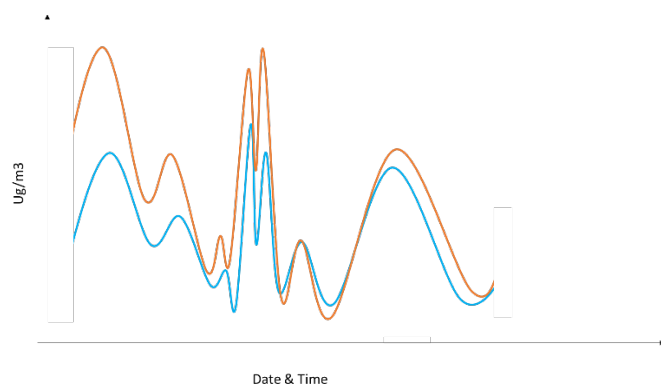


By definition the mass of all particles up to 1 micron in size cannot be higher than those up to 2.5 microns in size, so how is it possible for AQMesh to show such output? The answer relates to how AQMesh is characterised at the factory and this phenomenon is limited to low levels of particulate matter.

The image below indicates typical expected PM2.5 (Blue) and PM10 (Orange) readings when plotted alongside each other versus time.



The AQMesh factory characterisation process is intended to optimally normalise all pre-scaled PM results, based on comparison with a FIDAS 200 analyser. Each PM fraction is compared separately to the FIDAS output and a scaling factor applied, which is largely a function of particle density in ambient air samples at the time of factory characterisation. At very low PM levels - when there are few or no particles in the sample above the smaller fraction or PM levels are all very low – it is possible that the smaller fraction can read marginally higher than the larger fraction. This is illustrated below:



The fact that the smaller fraction is reading higher than the larger does not invalidate the result, but it does highlight the uncertainty caused by the differences in location and season between the QA/QC completed and the measurement when this result occurs. Please refer to the [AQMesh technical specification](#).