Subject **Data format**
From Ed Bray <enb33@cam.ac.uk>
To L. Scimeca <ls769@cam.ac.uk>
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- Data_20180131_141019.mat (369 KB)

Hi Luca,

I've done a test run with the robot and generated the data in a format that I think is reasonable. I've attached the .mat file here so you can check it out. At the moment all the readings are just random data so not relevant. The angles and depths in the files are examples that we can change if we need to.
Basically all the variables are 3D matrices unless I've said otherwise. When I refer to "planes", I mean setting the third dimension eg. the first plane of variable foo is accessed with foo(:,:,1), the second plane foo(:,:,2) etc.

The files are:

XY_data: the data collected in the XY test. This isn't really relevant for you, but it's there if you want it. The first plane is the x grid, second plane is the y grid and then the planes after that are the readings for each taxel at that point (taxel 1 is plane 3, taxel 2 is plane 4 etc. until taxel 7 is plane 9).

nodules: a simple 2D matrix with the locations of the nodules. The first column is the x coordinate of that nodule, second column is the y coordinate and third column is a weighted average of the taxels there (not relevant: I used it in the XY locating algorithm). For example, in this case nodule 2 is located at XY coordinate (20,240)

Vertical_nN: the data from the vertical probing test for nodule N. Each plane refers to a trial (each measurement is done a few times so we can take average readings). The first column of each trial is the depth at that point, then the rest of the row is the taxel readings.

Rotate_nN_dDDD_rRRR: the data from the rotary probing. This is more complicated as we're varying the depth and radius. N is the nodule number again, and now DDD gives the depth probed for this data and RRR gives the radius of rotation. Remember these values are *mm multiplied by 10* as I can't put decimal points in the variable name. For example, Rotate_n3_d100_r140 is the data for nodule 3 rotating around a depth of 10mm with radius 14mm. Again, the data in that variable is split into planes for each trial. The first plane is the angle in degrees (0 degrees is vertical) and the taxel readings fill out the rest of the row.

I hope that all makes sense! I can pretty easily rename them if that makes it easier for you.

Cheers,
Ed