First call to data base, shows all projects:

'SELECT ID\_PY, NAME\_PROYECT, MIN(DATE1), NAMESENSOR, NBANDAS, COUNT(DESC\_CLASS), SUM(SIMULACIONES) FROM (SELECT ID\_PY as ID\_PY, NAME\_PROYECT as NAME\_PROYECT, MIN(DATE1) AS DATE1, NAMESENSOR as NAMESENSOR, NBANDAS as NBANDAS, COUNT(DESC\_CLASS) AS DESC\_CLASS, SIMULACIONES FROM MASTER GROUP BY ID\_PY,ID\_CLASS,ID\_SIMULATION) T group by id\_py order by date1,id\_py

ID\_PY -> Project identification, grows as the number of projects increase in that database

* [12] [13] [14]…. Etc

NAME\_PROYECT -> project name, in case it was storage with a name

MIN(DATE1) -> Date of the day it was generated

NAMESENSOR -> name of the sensor

NBANDAS -> number of bands

COUNT(DESC\_CLASS) -> Number of classes inside the project, if we are using the same project for make different classes

SUM (SIMULACIONES) -> sum of all the simulations inside the proyect

Second call, select one concrete class:

'SELECT ID\_PY, ID\_SIMULATION, ID\_CLASS, DESC\_CLASS, ID\_MODEL, NAME\_MODEL,ID\_MASTER FROM MASTER WHERE ID\_PY=' num2str(ID\_PY) ' GROUP BY ID\_PY, ID\_SIMULATION, ID\_CLASS, ID\_MODEL;'

* Where num2str(ID\_PY) is the selected project

ID\_PY

ID\_SIMULATION -> identifier of the simulation inside the project

ID\_CLASS ->

DESC\_CLASS -> description of the class

ID\_MODEL -> identifier of the model (1 -> prospect 4, 8 -> 4 sail)

NAME\_MODEL -> name of the model

ID\_MASTER -> identifier referred to the first project that is available

Next call:

SELECT ID\_MASTER, ID\_PY, ID\_SIMULATION, ID\_MODEL, DATE1, NAME\_MODEL, DESC\_CLASS, SIMULACIONES,ID\_CLASS FROM MASTER WHERE ID\_PY=' num2str(ID\_PY) ' ORDER BY ID\_MODEL

* Where num2str(ID\_PY) is the selected project

ID\_MASTER -> identifier referred to the first project that is available

ID\_PY -> Project identification, grows as the number of projects increase in that database

ID\_SIMULATION -> identifier of the simulation inside the project

ID\_MODEL -> identifier of the model (1 -> prospect 4, 8 -> 4 sail)

Select RN (for example)

'SELECT ' grupo1{1,6}{1,1}

' FROM aux\_' grupo1{1,6}{1,4}{1,1}

' INNER JOIN ' tablasocio

' USING (' grupo1{1,3}{2,3} ');'

SELECT RN

FROM aux\_PROSPECT4\_T2

INNER JOIN s\_PROSPECT4\_T2

USING (ID\_T2);

Later we select the wl:

'SELECT ' grupo1{1,6}{1,5}{1,2}

' FROM ' grupo1{1,6}{1,5}{1,1}

' WHERE ' grupo1{1,3}{1,2} '=' num2str(model\_ref1{3})

' LIMIT 1;'

SELECT wl

FROM PROSPECT4\_T1

WHERE ID\_MASTER=4

LIMIT 1;

Inside MySQL, to show how master table is storage

use database\_for\_mysql

describe master;

select ID\_MASTER, id\_py, name\_proyect from master;

select ID\_MASTER, id\_py, name\_proyect,id\_model from master;

Creation of table master

'CREATE TABLE IF NOT EXISTS MASTER'

'(ID\_MASTER INT(11) NOT NULL AUTO\_INCREMENT PRIMARY KEY, '

'ID\_PY INT(11),

PY\_TYPE TINYINT,

ID\_SIMULATION INT(11),

ID\_CLASS INT(11),

ID\_MODEL INT(11),

NAME\_MODEL CHAR(150), '

'DESC\_CLASS CHAR(150),

VER\_DB CHAR(8),

NAME\_PROYECT CHAR(50),

COMENT\_PROYECT CHAR(150),

'DATE1 DATE,

TIME\_MODEL TIME,

NAMESENSOR CHAR(50),

NBANDAS INT(6),

BANDAS TEXT,

emulator LONGBLOB,

toc2toa LONGBLOB, '

'SIMULACIONES INT(11),

INDEX IDX\_ID\_PY(ID\_PY),

INDEX IDX\_SIM(ID\_SIMULATION),

INDEX IDX\_CLASS(ID\_CLASS)) ENGINE = MYISAM;'

Storage of data in master table

command=['INSERT INTO MASTER (ID\_PY,ID\_CLASS,ID\_MODEL,NAME\_MODEL,DESC\_CLASS,COMENT\_PROYECT,DATE1,NAMESENSOR,NBANDAS,BANDAS,ID\_SIMULATION) VALUES ('ID\_PY ',' ID\_CLASS ',' ID\_MODEL ',' NAME\_MODEL ',' DESC\_CLASS ',' COMENT\_PROYECT ',' DATE1 ',' NAMESENSOR ',' NBANDAS ',' BANDAS ',' ID\_SIMULATION ')'];

Meaning of T1 and T2

T1 -> storage the name, description, vcount, data, WL (all the data that we select when we are selecting the range and default values of the model)

T2 -> storage the values and results of the model ([N, cab, cw], [RN, TN])

(all models have a function that is called “run” where the model is “launched” and the result of the model is storage on the data base (table T2)

How is connected MASTER with the rest of the models

Name of the data base: check\_connection

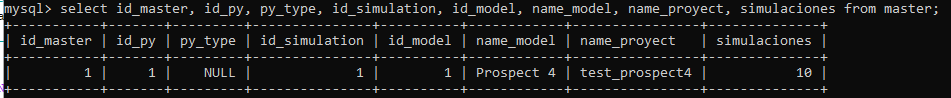
select id\_master from master;

is empty;

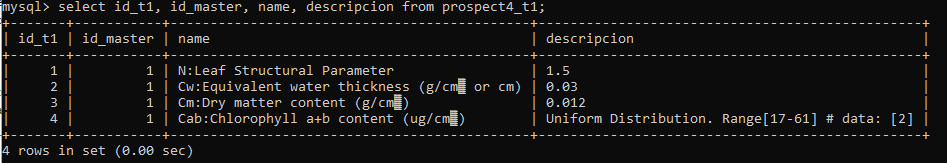
Create a model, prospect 4.

After that, we have the first model

Select id\_master, id\_py, id\_simulation, id\_model, name\_model, name\_proyect, simulaciones from master;

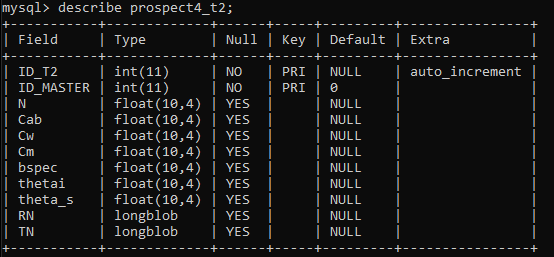


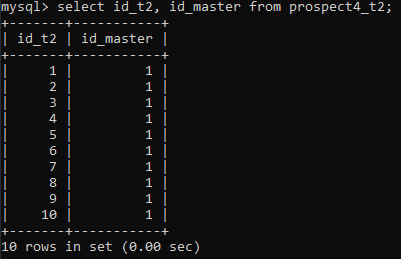
Select id\_t1, id\_master, name, descripcion from prospect4\_t1;



* Id\_t1 is going to be as large as the number of parameters we have in the model, is going to vary
* In the description we have the information we put when we were describing the model, with the default values or the range for each one of the variables.

Select id\_t2, id\_master from prospect4\_t2;

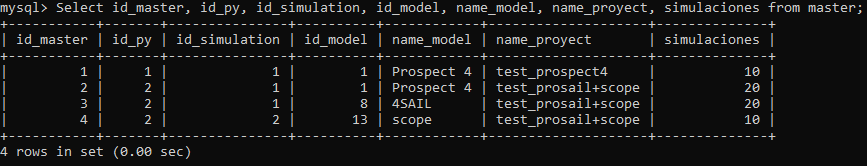




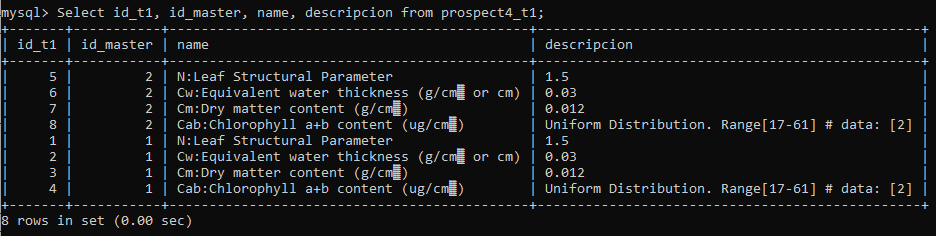
* In this table, the results of the simulation are saved (note that here, if we select LHS or random method, the number of simulations is going to depend from that number)

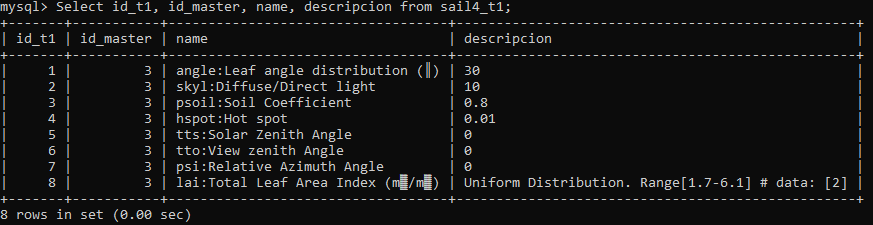
Now, We put in the same project a prosail4+ simulation plus a scope simulation;

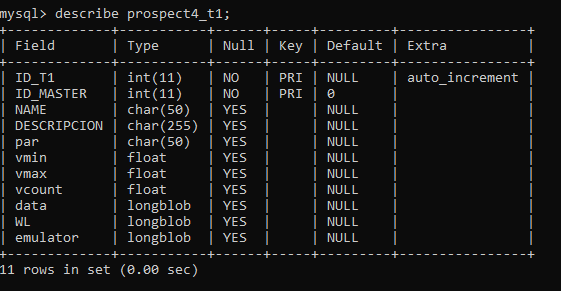
Select id\_master, id\_py, id\_simulation, id\_model, name\_model, name\_proyect, simulaciones from master;



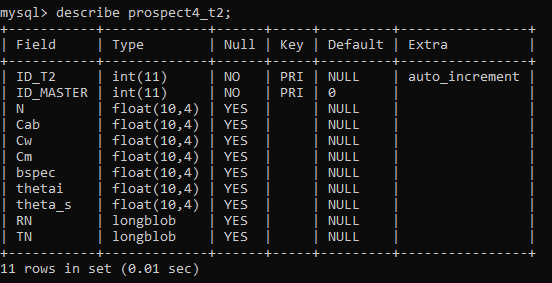
Now that we have more simulation, as we have done the prosail the 2nd one, the id\_py will be the second one.







From t1 we have the data we select at the begging, when selecting the range or default values of the simulation.



Here we have the data that will be used in the simulation with the result of it.

Connection table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Id\_model | Name | Table 1 | Table conecctions | Objet in Matlab | MYSQL TABLE |
| 1 | 'Prospect 4' | 2x3 cell | [] | 'obj\_prospect4' | 'prospect4' |
| 2 | 'Prospect 5' | 2x3 cell | [] | 'obj\_prospect5' | 'prospect5' |
| 3 | 'Prospect D' | 2x3 cell | [] | 'obj\_prospectD' | 'prospectD' |
| 4 | 'FluorMODleaf' | 2x3 cell | [] | 'obj\_fmlaef' | 'fmleaf' |
| 5 | 'DLM model' | 2x3 cell | [] | 'obj\_dlm' | 'dlm' |
| 6 | 'Liberty' | 2x3 cell | [] | 'obj\_liberty' | 'liberty' |
| 7 | 'FluspectB' | 2x3 cell | [] | 'obj\_fluspect' | 'fluspect' |
| 8 | '4SAIL' | 2x3 cell | 4x3 cell | 'obj\_4sail' | 'sail4' |
| 9 | 'FLIGHT' | 2x3 cell | 4x3 cell | 'obj\_flight' | 'flight' |
| 10 | 'fsail' | 2x3 cell | 1x3 cell | 'obj\_fsail' | 'fsail' |
| 11 | 'inform' | 2x3 cell | 4x3 cell | 'obj\_inform' | 'inform' |
| 12 | 'slc' | 2x3 cell | [] | 'obj\_slc' | 'slc' |
| 13 | 'scope' | 2x3 cell | [] | 'obj\_scope' | 'scope' |

To the last column, you will have to add \_t1 or \_t2 in access to both tables

\_t1

\_t2