initGPR

Initializes GPR model by passed trainings dataset and GPR options struct.

Syntax

```
Mdl = initGPR(TrainDS, GPROptions)
```

Description

Mdl = initGPR(TrainDS, GPROptions) sequential initializing.

Examples

```
load config.mat PathVariables GPROptions;
TrainFiles = dir(fullfile(PathVariables.trainingDataPath, 'Training*.mat'));
TestFiles = dir(fullfile(PathVariables.testDataPath, 'Test*.mat'));
assert(~isempty(TrainFiles), 'No training datasets found.');
assert(~isempty(TestFiles), 'No test datasets found.');
try
    TrainDS = load(fullfile(TrainFiles(1).folder, TrainFiles(1).name));
    TestDS = load(fullfile(TestFiles(1).folder, TestFiles(1).name));
catch ME
    rethrow(ME)
end
Mdl = initGPR(TrainDS, GPROptions);
[fang, frad, fcos, fsin, fcov, s, ciang, cirad] = predDS(Mdl, TestDS)
```

Input Argurments

TrainDS loaded training data by infront processesed sensor array simulation.

GPROptions loaded parameter group from config.mat. Struct with options.

Output Argurments

Mdl bare initialized model struct with no further optimization.

Requirements

- Other m-files required: None
- Subfunctions: initGPROptions, initTrainDS, initKernel, initKernelParameters
- MAT-files required: config.mat, Train_*.mat

See Also

- initGPROptions
- initTrainDS
- initKernel
- initKernelParameters


```
function Mdl = initGPR(TrainDS, GPROptions)

    % create model struct
    Mdl = struct();
```

```
    % init GPROptions on model struct
    Mdl = initGPROptions(Mdl, GPROptions);

    % init training data on model
    Mdl = initTrainDS(Mdl, TrainDS);

    % init kernel, covariance function, mean function and input transformation
    % function if needed, initGPROptions and initTrainDS must run before
    % initKernel otherwise missing parameters causing an error
    Mdl = initKernel(Mdl);

    % init model kernel with current hyperparameters, kernel must be initiated
    % before otherwise nonesens and errors
    Mdl = initKernelParameters(Mdl);

end
```

Published with MATLAB® R2020b