setup

overhead

tag

In[311]:=
```
home = "rcs/fourier/analysis/";
Get["utility modules.m", Path → dirPack];
Get["rcs-tools-01.m", Path → dirnb <> "rcs/tools/"];
stamp1;
```

CreateDirectory: /Users/dantopa/primary–repos/github/experiment–mathematica/io/ already exists.

CreateDirectory: /Users/dantopa/primary–repos/github/experiment–mathematica/io/rcs/ already exists.

CreateDirectory: /Users/dantopa/primary–repos/github/experiment–mathematica/io/rcs/fourier/ already exists.

General: Further output of CreateDirectory::filex will be suppressed during this calculation.

```
maximum memory: 0.178191 GB
seed file: /Users/dantopa/primary-repos/github/experiment-mathematica/nb/seed 19_12.nb
user: dantopa, CPU: Xiuhcoatl,  MM v. 12.1.0 for Mac OS X x86
date: May 13, 2020, time: 21:23:56
nb: /Users/dantopa/primary-repos/github/experiment-mathematica/nb/rcs/fourier/analysis/
 catalog-elevation-solutions.nb
```

modules, functions, settings, ...

import

In[326]:=
```
rcs = Import[dirDataLocker <> sciaccarcs];
Dimensions[rcs]
λ = Length[rcs]
```

Out[•]= {28, 361}

Out[•]= 28

In[•]:=
```
dataLocker =
  "/Users/dantopa/primary-repos/github/experiment-mathematica/io/rcs/harvest/data/
    ";
angle = 90;
elev = "0p" <> pad[angle, 3];
rcs = Import[dataLocker <> "mean-total-rcs-" <> elev <> ".dat"];
Dimensions[rcs]
λ = Length[rcs]
```

Out[•]=
```
{28, 360}
```

Out[•]=
```
28
```

---

sweep

In[•]:=
```
mesh = Range[-180, 179];
$tick;
Do[
  Do[
    stub = "nu=" <> pad[nu] <> "-d=" <> pad[d] <> "-elev=" <> pad[angle];
    fileψ = dirData <> "soln-" <> stub <> ".txt";
    fileϕ = dirData <> "errs-" <> stub <> ".txt";
    ψ = OpenWrite[fileψ, PageWidth → ∞];
    ϕ = OpenWrite[fileϕ, PageWidth → ∞];
    (* date vector *)
    b = rcs[[nu - 2]];
    (* build linear system *)
    A = BuildAFourierCos[mesh, d];
    (* least squares solution *)
    x = LeastSquares[A, b];
    (* error analysis *)
    {ϵ, signalToNoise} = errorN[A, x, b];
    Do[
     Write[ψ, x[[j + 1]]];
     Write[ϕ, ϵ[[j + 1]]];
     , {j, 0, d}];
    Close[ψ];
    Close[ϕ];
    , {d, 0, 50}];
  , {nu, 3, 30}];
tiempo["inf norm sweep"]
```

```
inf norm sweep
CPU time: 3359.39 sec; 55.9898 min
elapsed time: 1902.115736 sec; 31.7019 min
```

end

In[•]:=
```
(* save notebook *)
NotebookSave[EvaluationNotebook[]];
```