Generic method for spectra alignment in spectral domain optical coherence tomography with two spectrometers

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This is an example to demonstrate the spectra alignment in SD-OCT. For more details, please refer to the publication above. Feel free to use and modify it as academic purpose and citation will be appreciated but not requested.

1.Data Acquisition

We acquired the interference fringes from reference mirror and mirror as sample ten times. Every time the reference mirror is at different locations, and we not them as f1.mat to f10.mat.

2.Codes description

StepA_backgroundExtract.m
To extract the background of the interference fringes. No much contents here.

StepB_RSK_DispC.m
To transform the fringe into evenly sampled k-space by Hilbert transform and calibrate the dispersion here.

StepC_SpectrumAlignment.m
Transform the fringes of two channels into the identical k-space. Two parameters solved here, first is scaling factor second is shift factor.