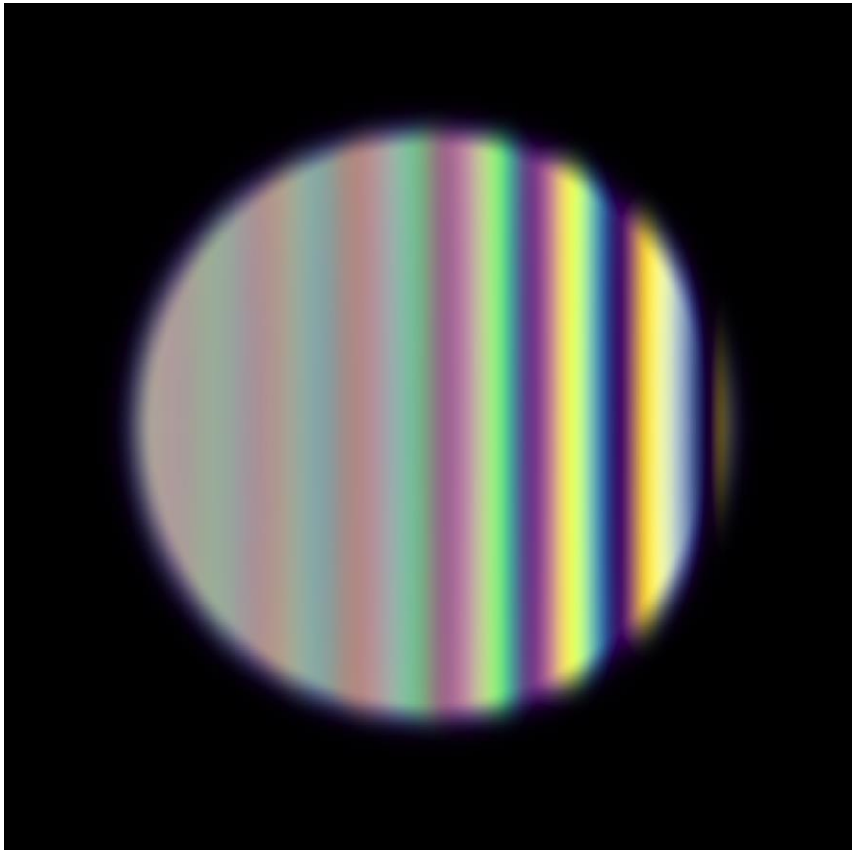
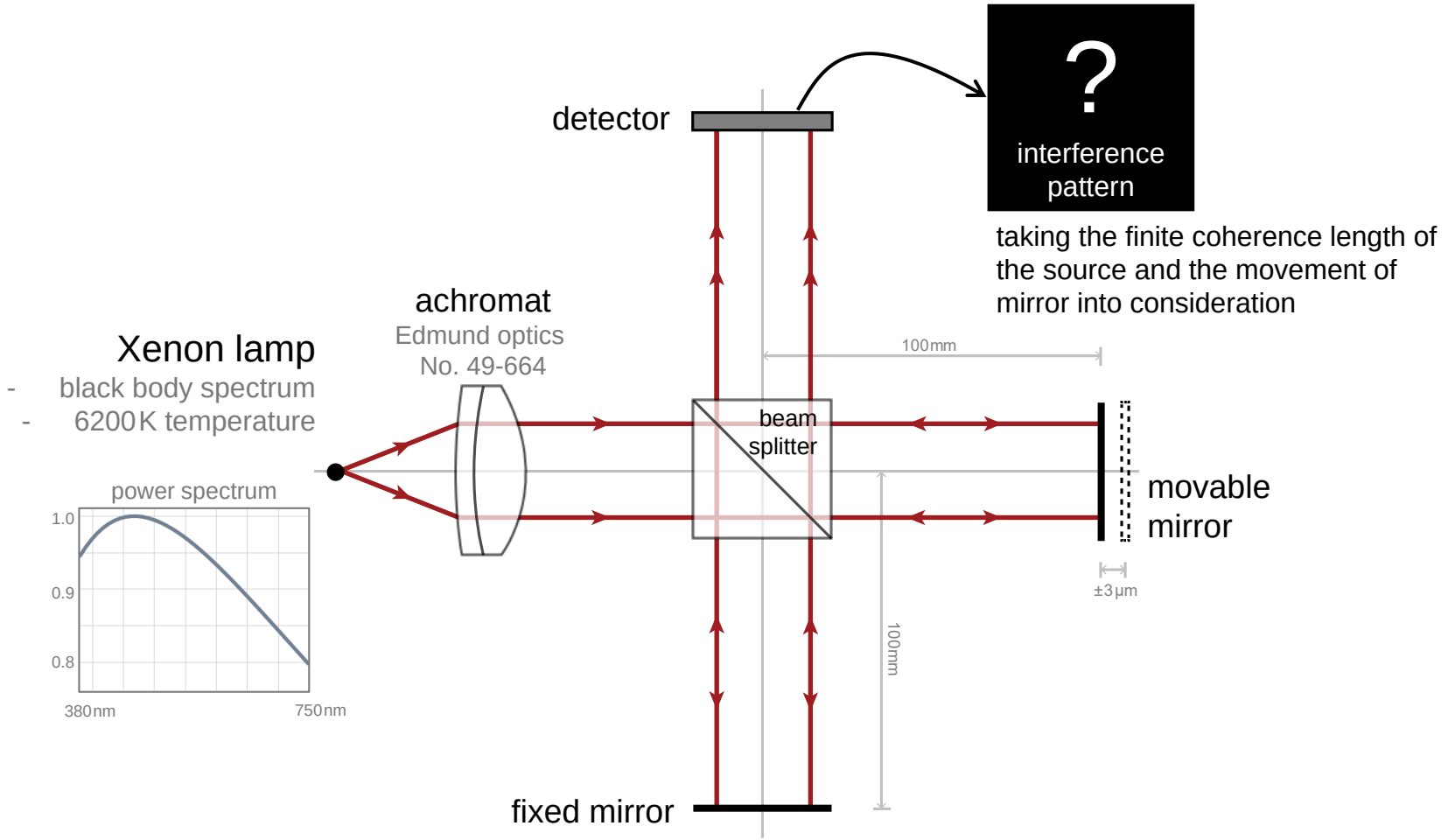
Michelson Interferometer

Abstract



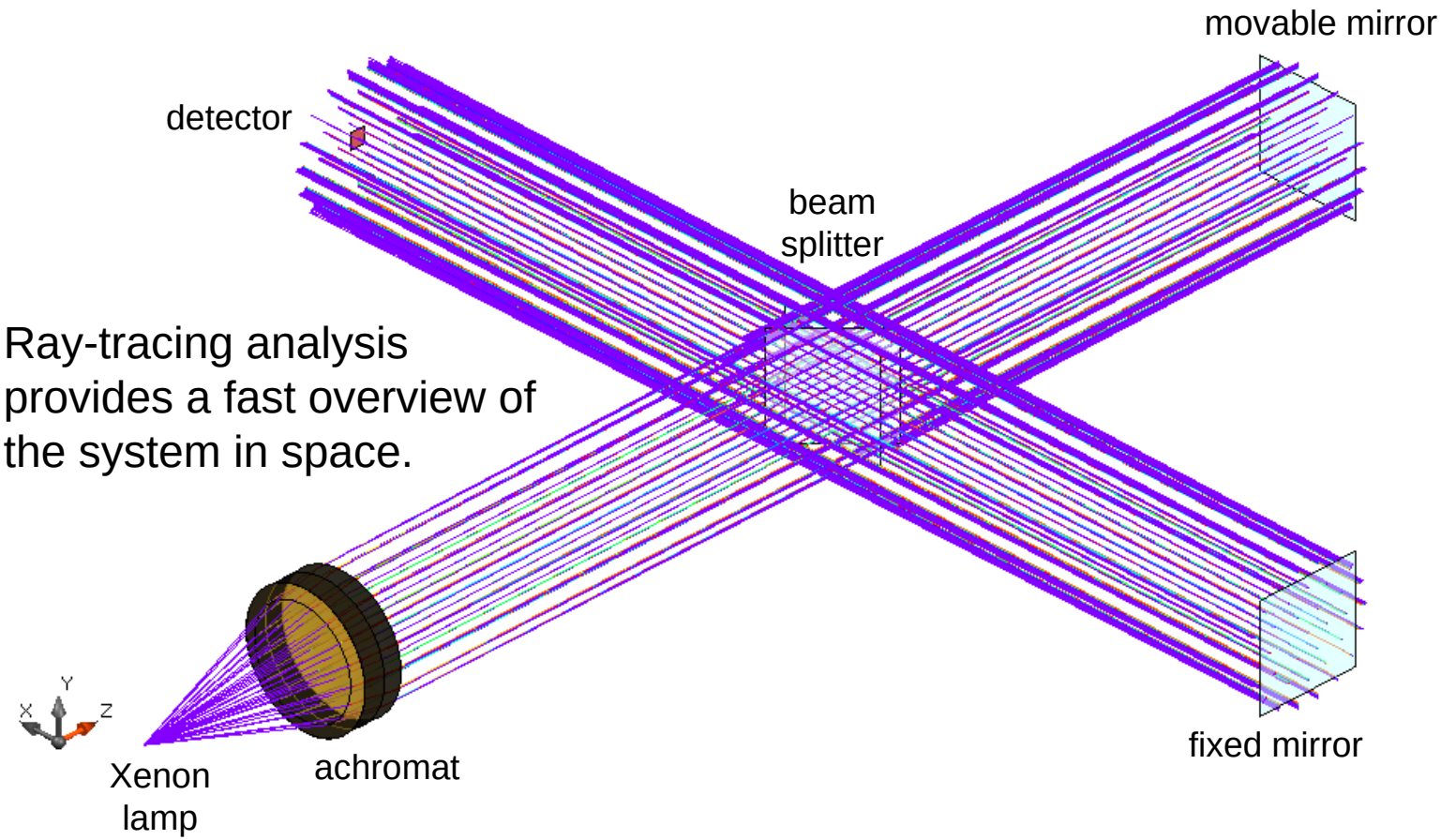
White light interferometry is a non-contacting technique for precise measurement of e.g. surface profiles and extremely small movements. With a Michelson interferometer setup, and a Xenon lamp source, the white light interferometry is demonstrated in VirtualLab. With the spectral property, i.e. limited coherence length, of the source taken into account, it is shown that interference pattern only appears when the path lengths of both arms are almost the same.

Modeling Task



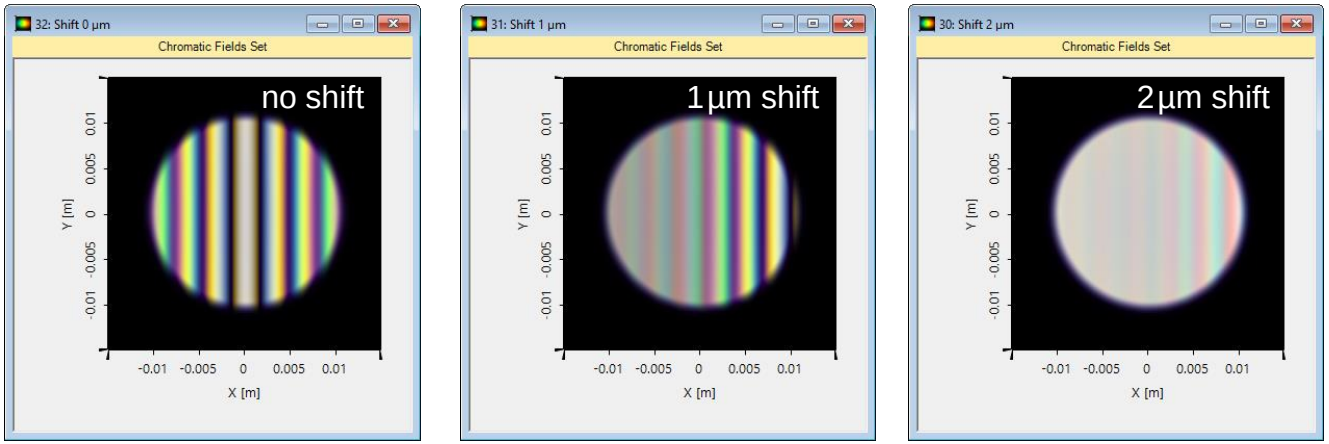
Results

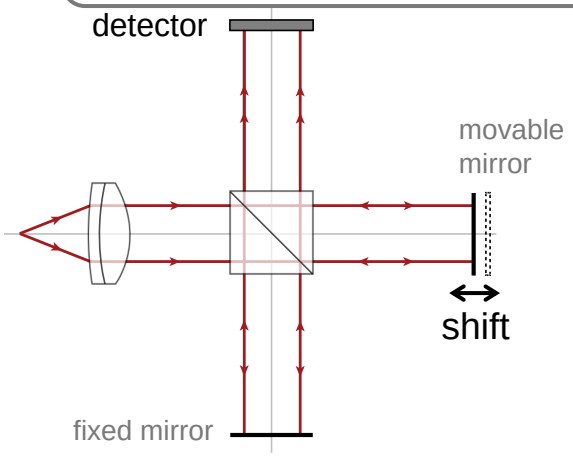
- Ray tracing

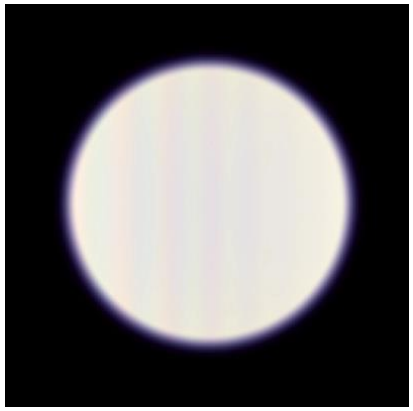


Results

- Field tracing







When movable mirror moves from -3µm to +3µm, the interference pattern shows up and disappears, due to limited coherence length of the light source.

Document Information

title	Michelson Interferometer
version	1.0
VL version used for simulations	7.3.0.41
category	Technology Use Case