

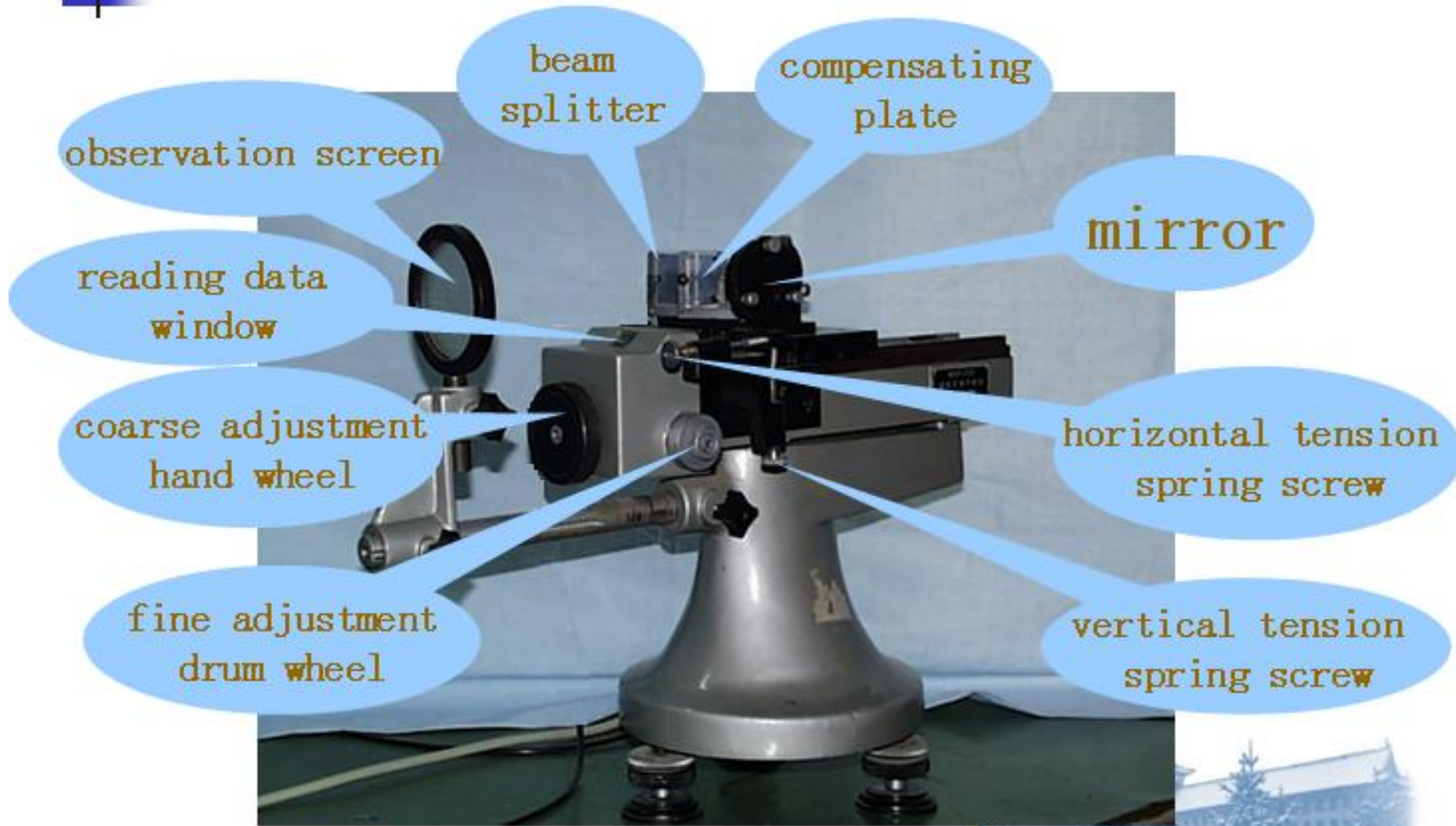


Using the Michelson Interferometer

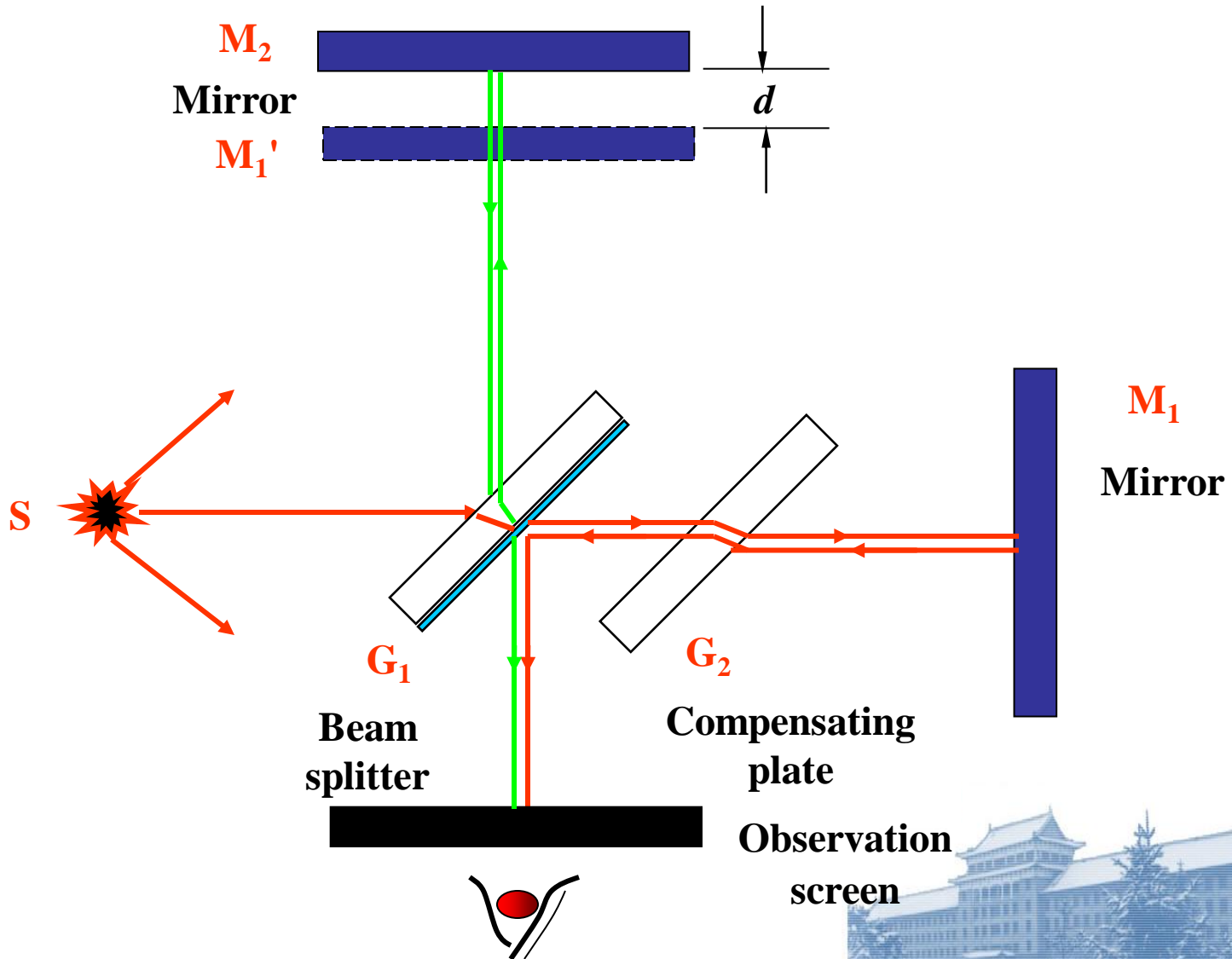
By
S.V.Dholakia
Physics Dpartment @Bhavans college Dakor



Structure of Michelson Interferometer



Experiment Principle



measuring laser wavelength

$$2d \cos \varphi = k\lambda \quad k=0,1,2, \dots\dots$$

When k 、 λ are invariable, with the decrease of d , φ decreases . Then radius of ring fringe of the same k order decreases, as appears that interference circles contract inward. Similarly with the increase of d , interference circles expand forth. If the fringes in the circle center contract inward or expand forth N times, the variation of optical path difference is $2\Delta d = N\lambda$, then we have

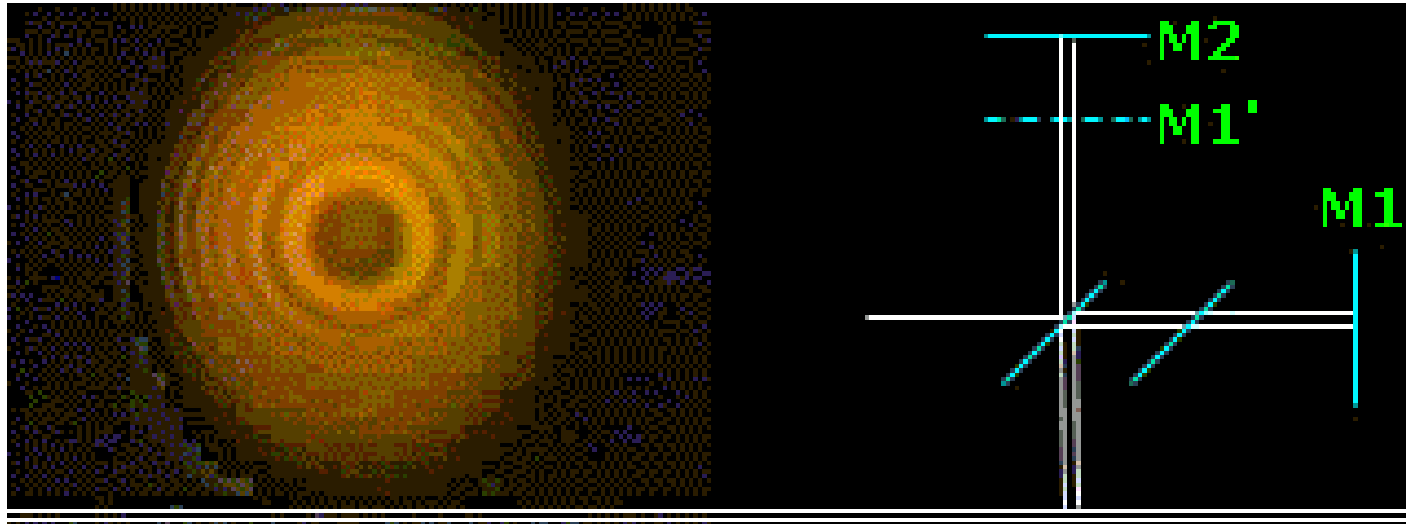


$$\lambda = 2\Delta d / N$$

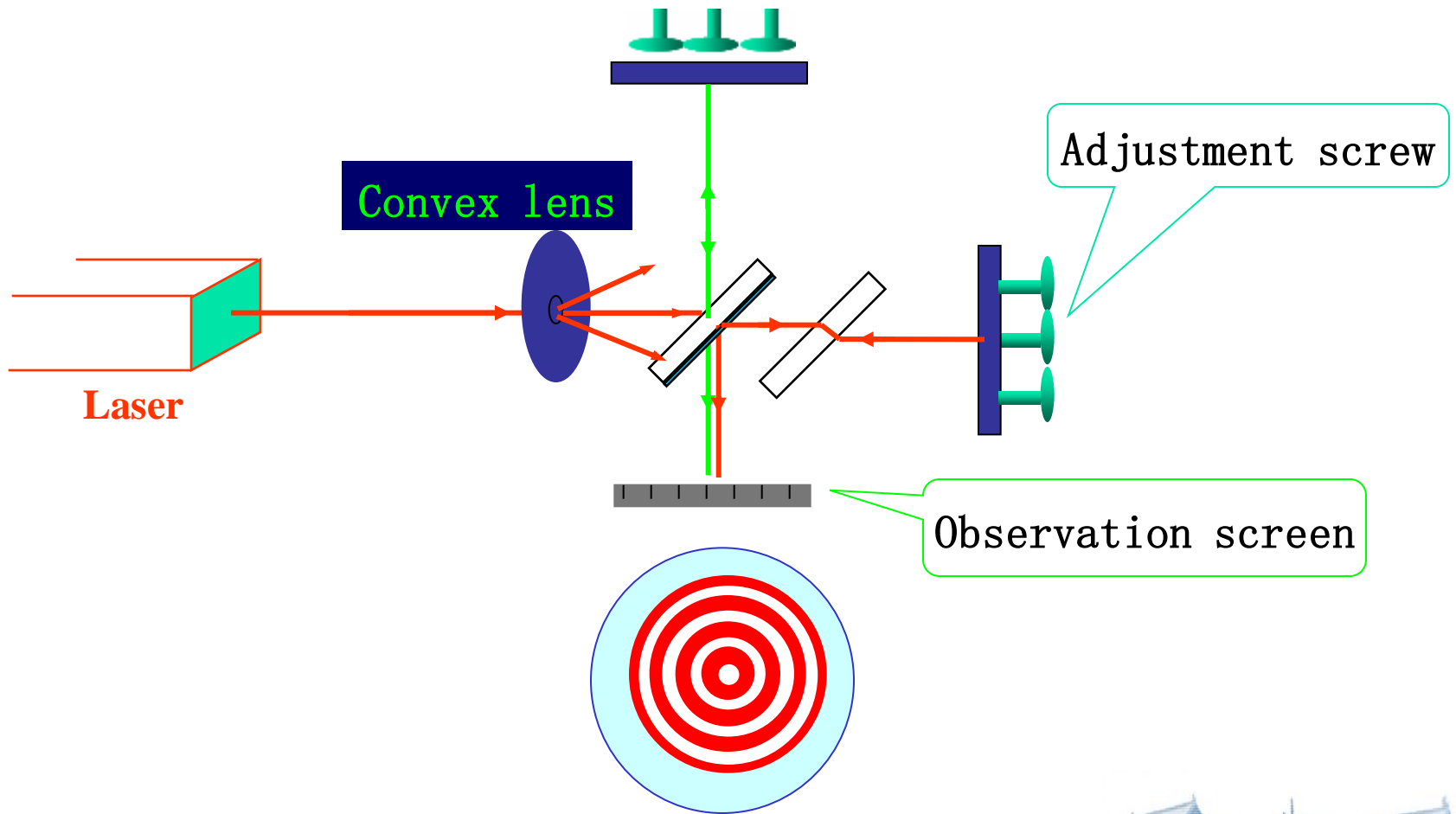


Experiment Demonstration

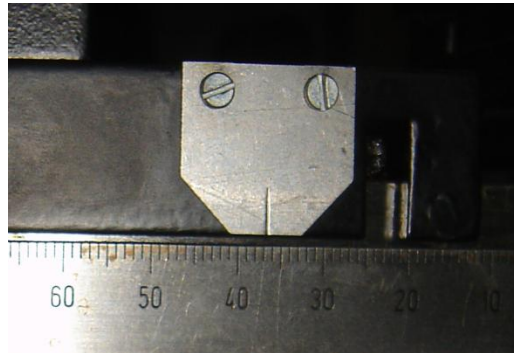
$$2d \cos \varphi = k\lambda$$



Experimental Procedure



Data Reading



Graduated scale Reading data window Fine adjustment drum wheel

XX.

XX

XXX

Graduated scale Reading data window Fine adjustment drum wheel

36.71503mm





Thank you!

