

### **0.0.1 Retardation Measurements of Infrared PVA Wave plate**

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3. Cao, W.D., Liu, Zh., 2002, Proceedings of the COSPAR Colloquium Vol.14, 75, 82

The wave plate made of Polyvinyl Alcohol (PVA) plastic film has several advantages, such as its lower cost and insensitivity to temperature and incidence angle, so it has been used in the Solar Multi-Channel Telescope (SMCT) in China. But the important parameter retardations of PVA wave plates in the near infrared wavelength have never been provided. In this paper, a convenient and high precise instrument to get the retardations of discrete wavelengths or a continuous function of wavelength in near infrared is developed. In this method, the retardations of wave plates have been determined through calculating the maximum and minimum of light intensity. The instrument error has been shown. Additionally we can get the continuous direction of wavelength retardations in the ultraviolet, visible, or infrared spectral in another way.