Depolarization in λ/2 Plate and Faraday Isolator

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- Depolarization in zero-order λ/2 plate & Faraday Rotator
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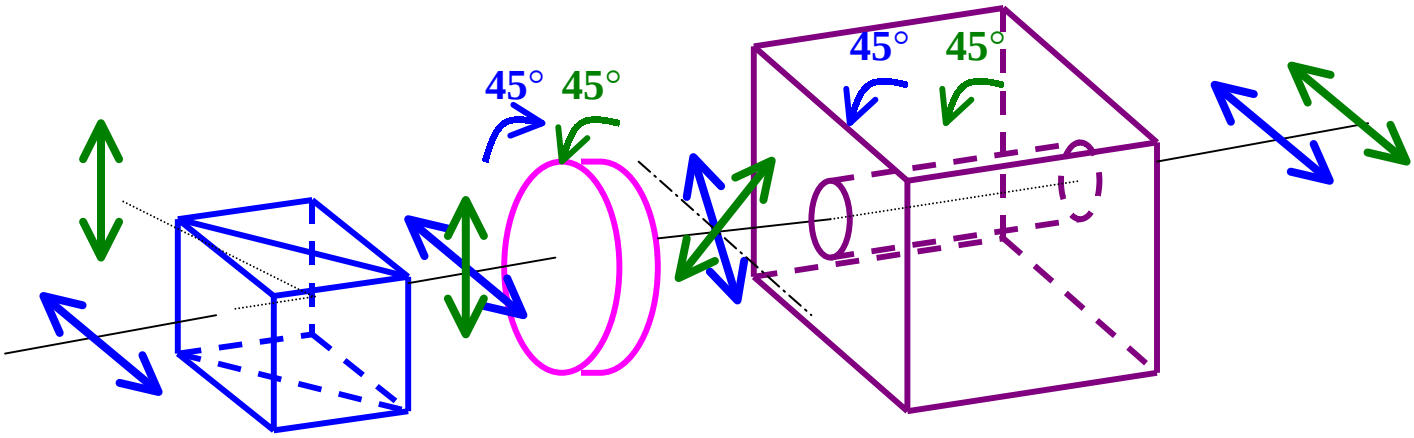
  [1)] University of Florida
  [2)] Institute of Applied Physics

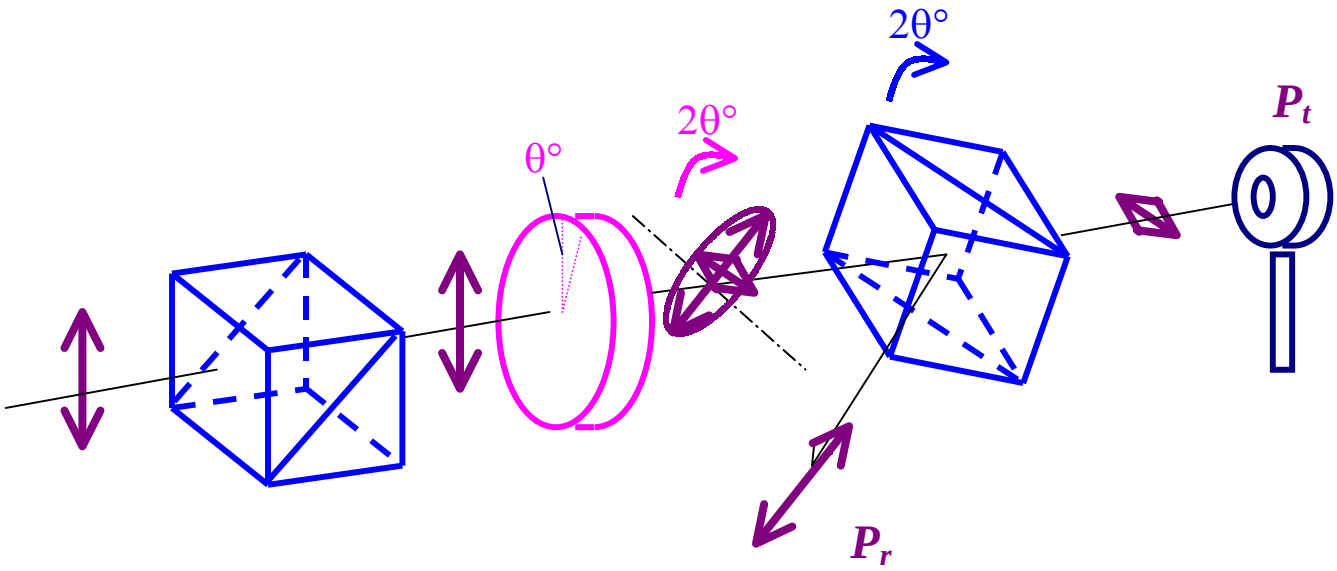
λ/2 plate in Faraday Isolator



Forward-going beam

Backward-going beam

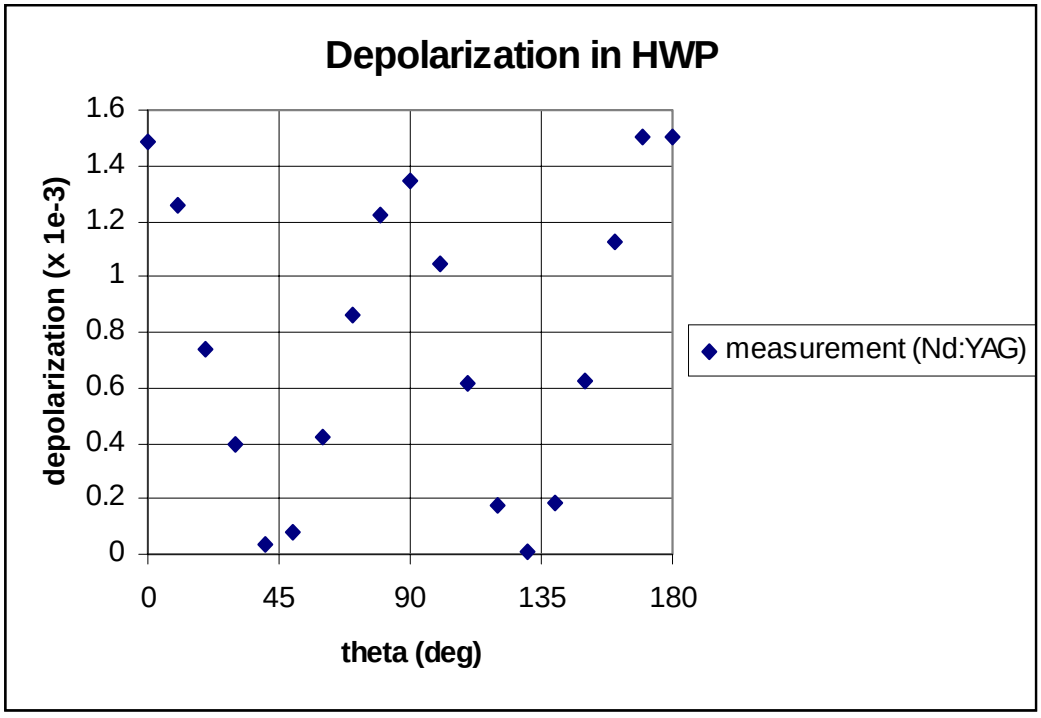
Experimental setup for one HWP



$P_{in} = P_r + P_t$

Depolarization $= P_t / P_{in}$

Measured depolarization (one HWP)



Measurement and calculation depolarization (one HWP)

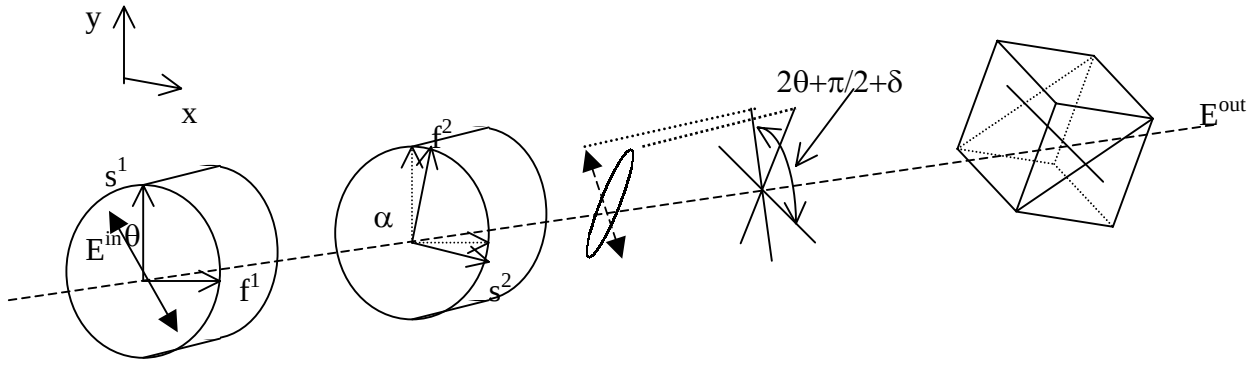


Fig.1 zero-order HWP and an analyzer cross-polarized to slightly elliptical output polarization.

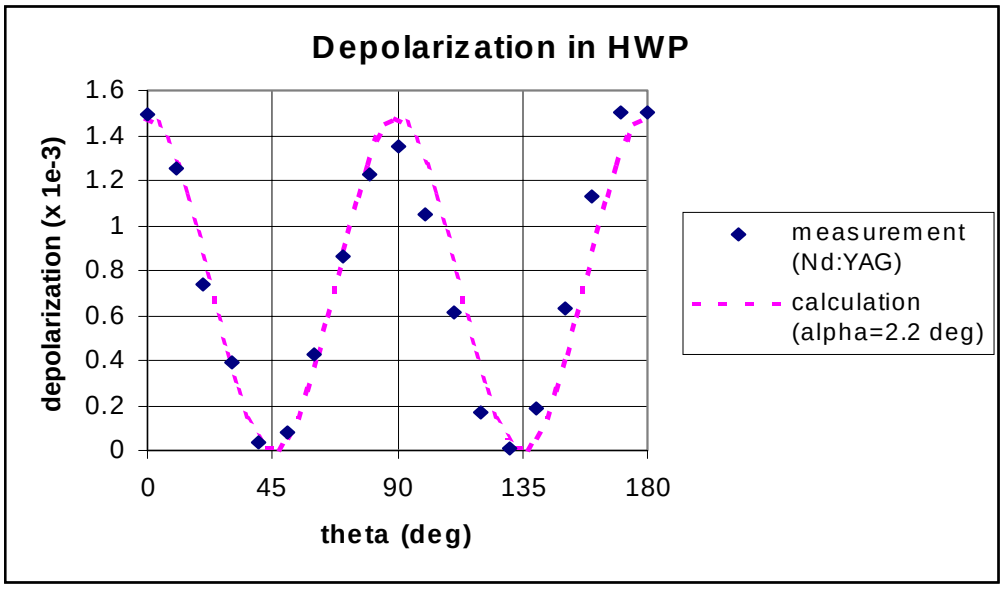


Fig.3 Depolarization due to imperfection of a half-wave plate

Depolarization in aligned HWP (He Ne)

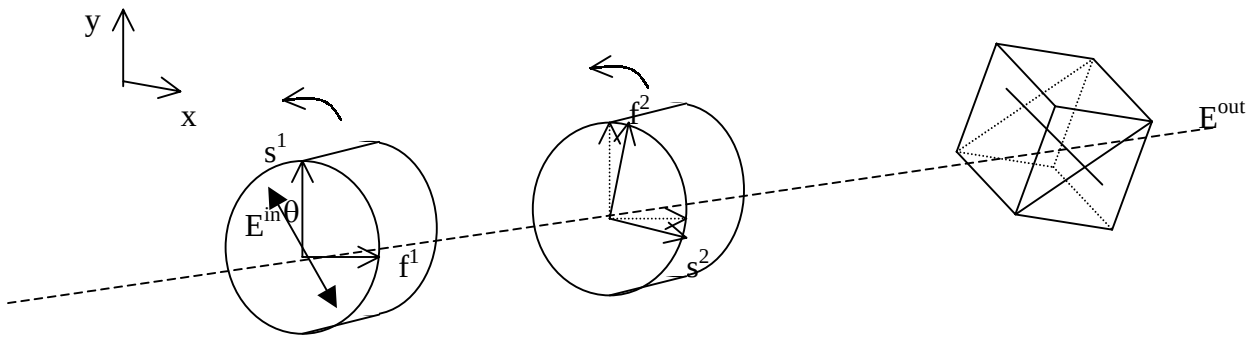
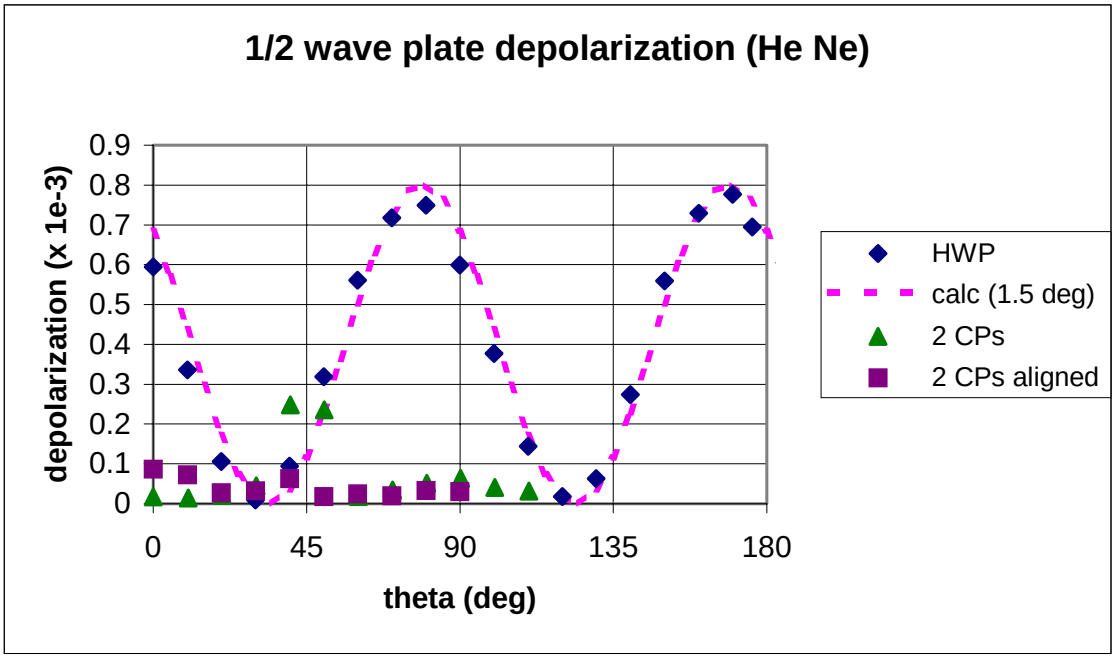
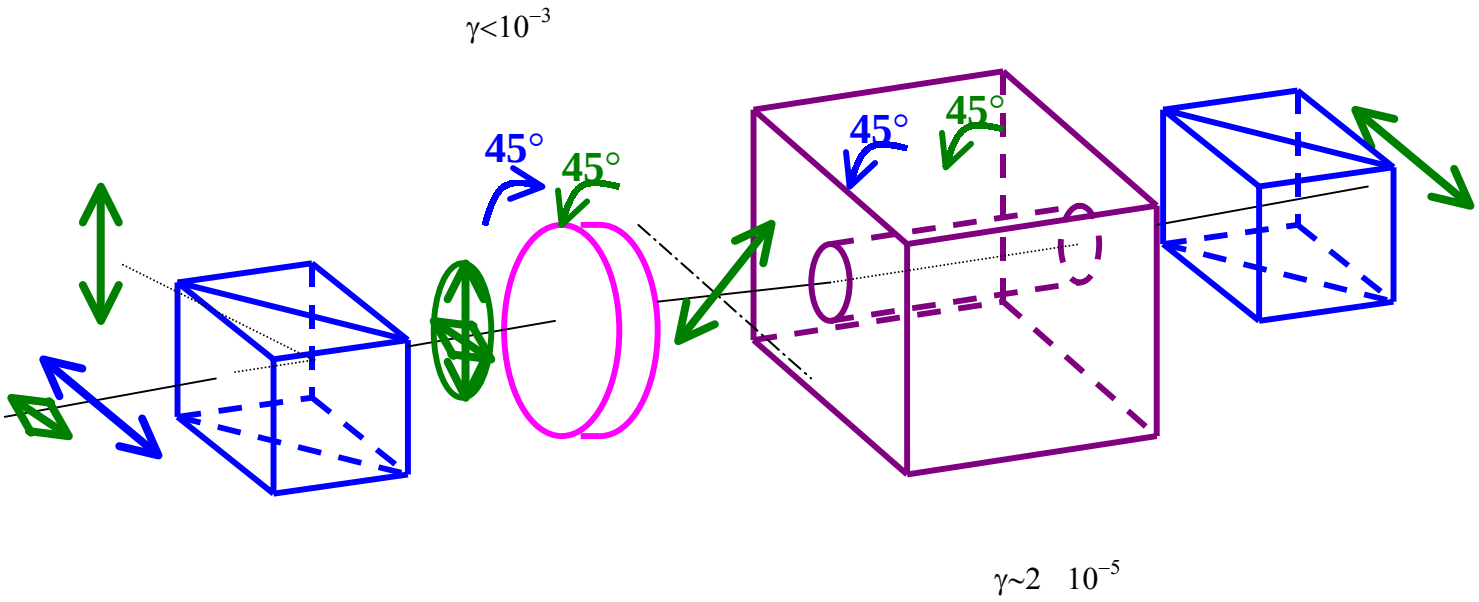


Fig.3 Rotate two components plates of HWP independently



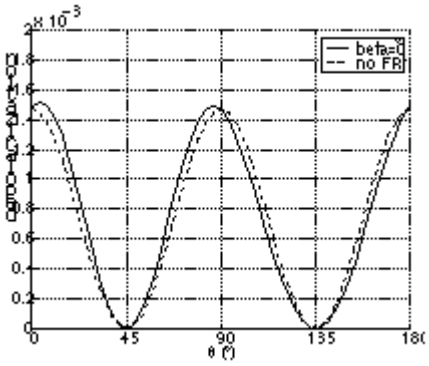
λ/2 plate in Faraday Isolator (w/ depolarization)

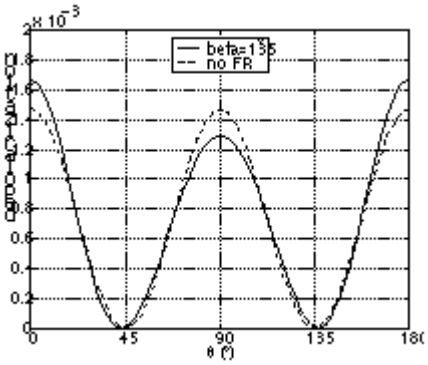


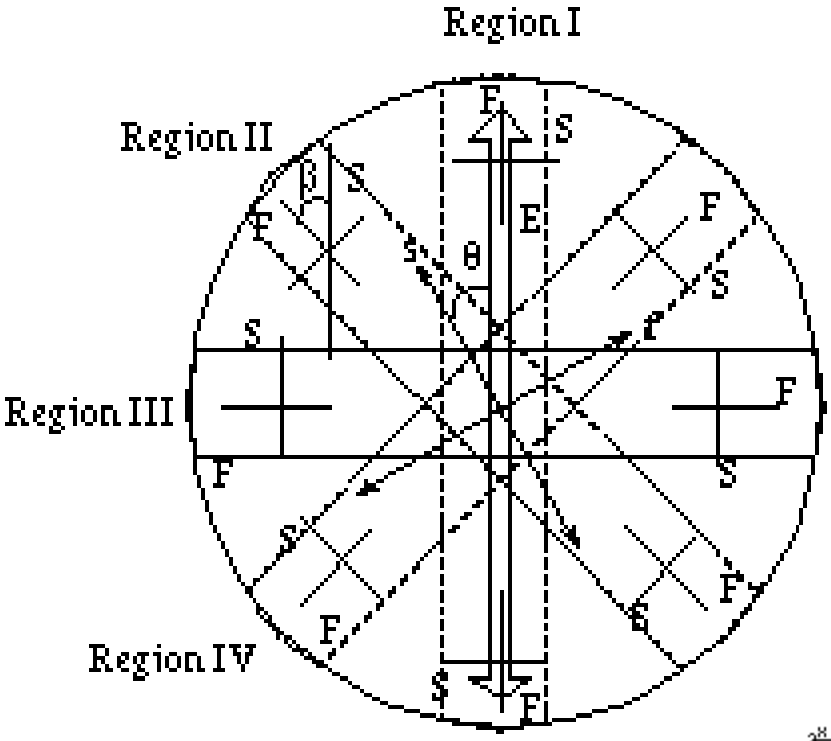
Forward-going beam

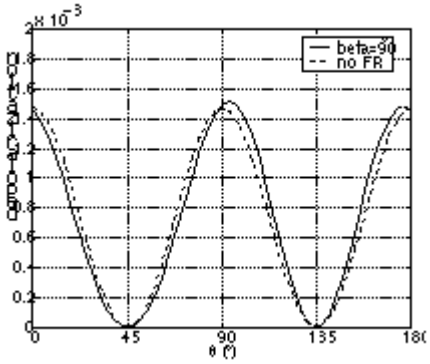
Backward-going beam

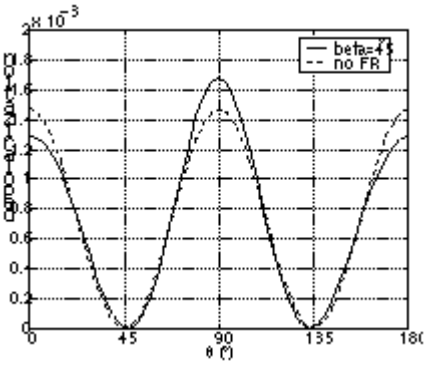
Depolarization in Faraday Isolator (HWP + FR)



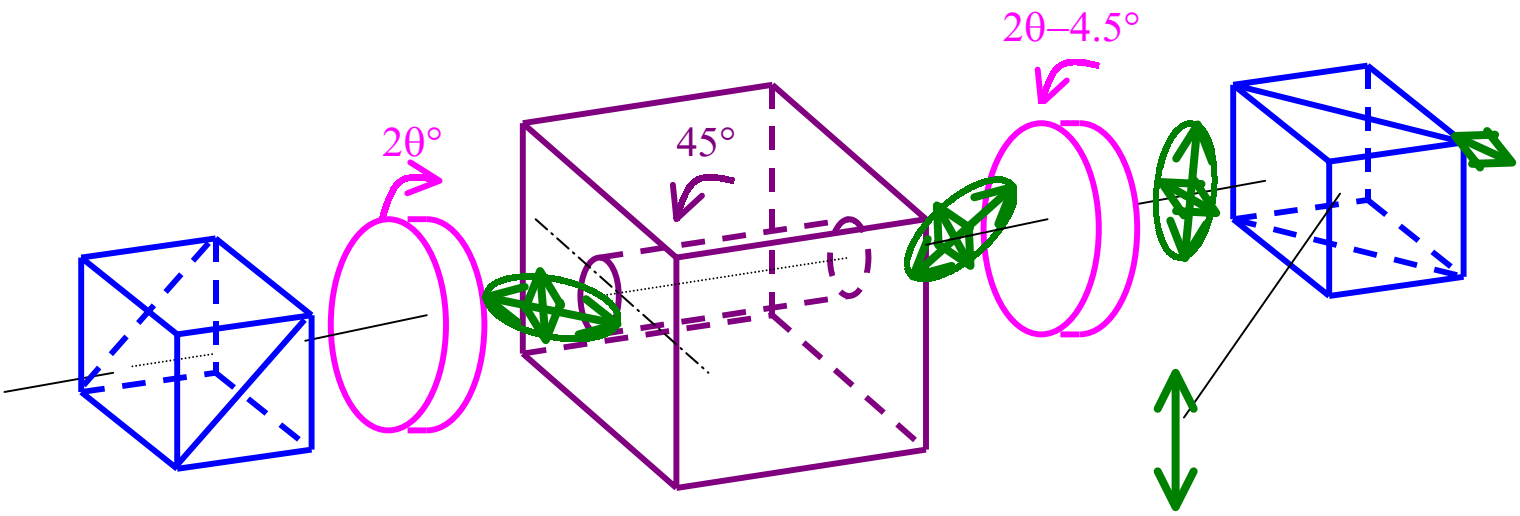




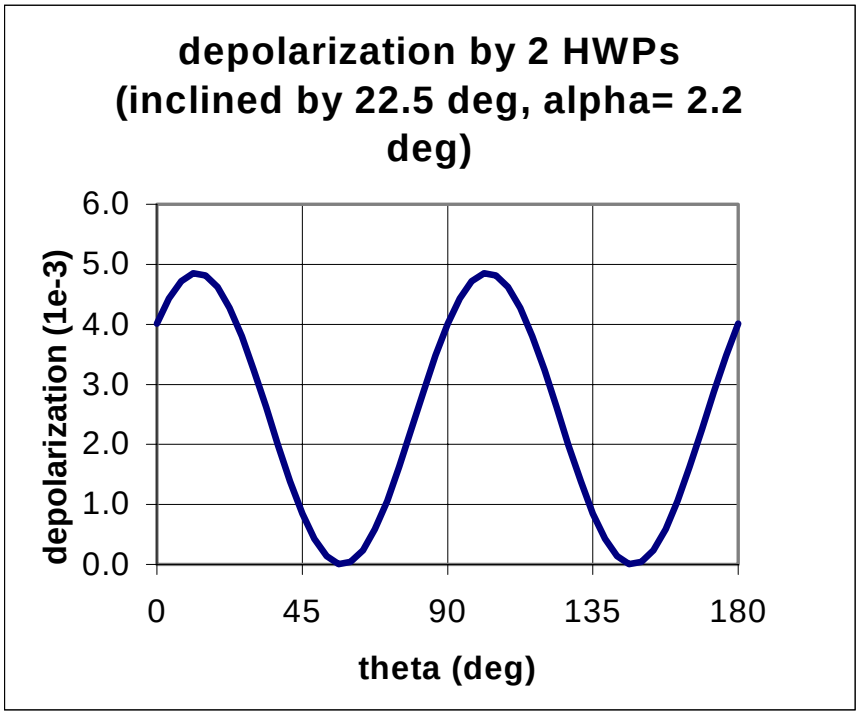




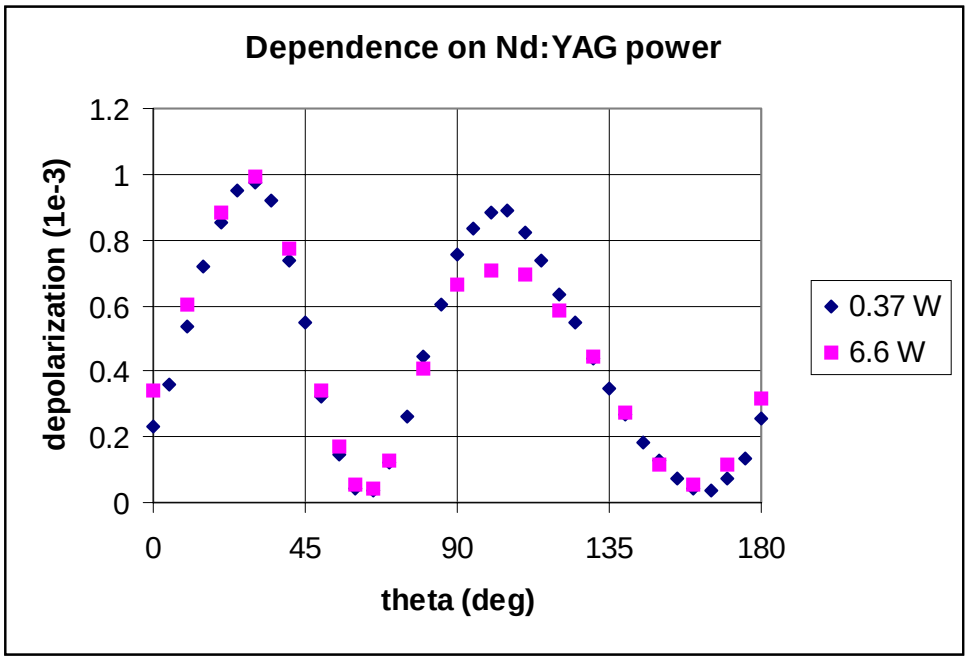
Depolarization in Faraday Isolator (HWP + FR + HWP)



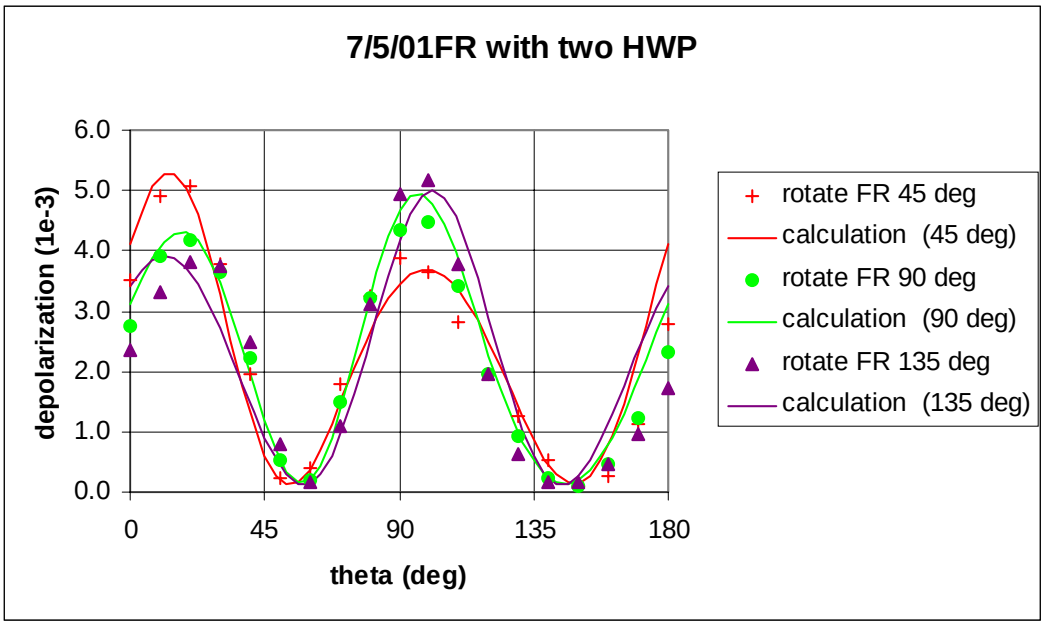
Depolarization in Faraday Isolator (HWP [+ FR] + HWP)



Nd:YAG laser power dependence



Depolarization in Faraday Isolator (HWP + FR + HWP)



Relative phase retardation in TGG crystal