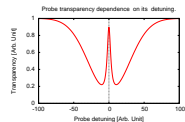
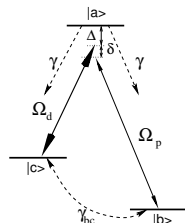


Personal and proposed activities

People. PI: Eugeniya E. Mikhailov (*EEM*); grad students: Mi Zhang (*MZ*) and Gleb Romanov (*GR*); undergraduate: Hunter Rew (*HR*).

- Frequency-dependent squeezing angle filter with atomic ensembles.
 - theory: *EEM* and *HR* will expand our simple numerical model to a more realistic atomic configuration
 - theory: *EEM* and *HR* will search for optical fields configuration enabling filter switch from low-pass to high-pass regime.
 - theory: *EEM* and *HR* will search for optical fields configuration enabling squeezing angle rotation configuration.
 - theory: *EEM* and *MZ* will work on the full model including atomic quantum noise coupling into the light squeezing field in such atomic systems to see the what limits, if any, it sets on the squeezing filtering.



Proposed activities continued

- Spatial transformation of the squeezed field after propagation through the resonant Rb atomic ensemble.
 - experiment: *EEM* and *MZ* will see how spatial squeezed mode modifies after interaction with atoms.
- Intra-cavity squeezing with atomic ensembles.
 - experiment: *EEM* and *MZ* will see if surrounding atomic ensemble with cavity will improve generated squeezing.
- Loss-less cavity with the fast light.
 - experiment: *EEM* and *GR* will see if it possible to create white-light cavity with negligible losses

