

Double resonance spectroscopy of ${}^4F_{5/2}$ state in Er:YSO crystal for coherence generation

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- Motivation: To generate coherence, we need to measure properties of transition in-between two excited states(${}^4I_{13/2}$ and ${}^4F_{3/2}$ or ${}^4F_{15/2}$ in Er:YSO)
- Setup: Excite from ground state to 1st excited state with ECLD, 1538nm(${}^4I_{15/2} \rightarrow {}^4I_{13/2}$), Excite from 1st to 2nd excited state with Ring dye laser, 640nm(${}^4I_{13/2} \rightarrow {}^4F_{5/2}$)
- Result: Absorption peak from the transition between two excited states was observed, emission peak from the highest state was observed. A coefficient(preliminary) was estimated from the observations.

