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**Coherent Surface-Enhanced Resonant Raman Spectroscopy** XIAOHAN LIU, Xi'an Jiaotong Univ, DMITRI VORONINE, MARLAN SCULLY, Texas A&M Univ, IQSE TEAM — Spontaneous Raman scattering has been widely used to perform molecular chemical analysis but weak signals from small amounts of material present a challenge. Surface-enhanced Raman scattering (SERS) and coherent anti-stoke Raman scattering (CARS) spectroscopies are two of the most common techniques to enhance the Raman signals. Several attempts have been done to combine those techniques to reach the maximum signal enhancement. We investigate resonant Raman effects for enhanced Raman scattering and combine it with surface and coherence enhancements.

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