COHERENT CONTROL OF IONIZATION FRAGMENTATION OF SO_2

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The coherent control of ionization fragment of SO_2 is obtained by managing the ionization contribution from a highly vibrational excited state of the ground electronic state, which is coupled to a ro-vibronic state of ${}^{q}R(6)_{1,5}$ of SO_2 $\tilde{C}$ state and is coherently prepared by a pump laser pulse. Carefully choosing the probe wavelength, the ion fragment from either the "bright" or the "dark" state of SO_2 can be manipulated.