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Abstract

Recent advancements in technology have enabled experimentalists to probe the charge order of the cuprates more easily. We use ^{139}La NMR measurements of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ for doping concentrations of $x=0.13$, 0.115 and 0.10 , plotting the first charge order dome of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ obtained using NMR. We found that the spin-lattice relaxation rate can be split into a fast and slow component below the charge ordering temperature. Based on a two-component analysis of the nuclear relaxation curves, we estimate the volume fraction, f_{fast} , of the CuO_2 planes hosting fast relaxing ^{139}La sites that are under the influence of enhanced low frequency Cu spin fluctuations triggered by charge order. f_{fast} is not 100% immediately below T_{charge} . Instead, f_{fast} progressively grows and reaches $\sim 80\%$ for $x=0.13$ and 100% for $x=0.10$ and 0.115 far below T_{charge} at $\sim 10\text{K}$.