

Neutron scattering study of YBCO6.33

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We use neutron scattering to study highly-quality YBCO6.33 single crystals with a T_c of 5K. The magnetic correlation lengths become larger in YBCO6.33 compared to YBCO6.35 ($T_c=18k$), but it is still finite. The samples don't show a transition to an antiferromagnetic long-range order. We find that with cooling the central mode grows and eventually saturates with no change at or below T_c . Compared to YBCO6.35, the central mode in YBCO6.33 is stronger and the onset temperature for the saturation is higher. So the antiferromagnetic interactions are enhanced in YBCO6.33, but not strong enough to produce long-range order.