**Conductance of long Aharonov-Bohm-Kondo rings**[1] ZHENG SHI, Univ of British Columbia, YASHAR KOMIJANI, Rutgers Univ — We calculate the finite temperature linear DC conductance of closed and open long Aharonov-Bohm-Kondo (ABK) rings. We show that, as with the short ABK ring, there is a contribution to the conductance from the connected 4-point Green's function of the conduction electrons. At sufficiently low temperatures this contribution can be eliminated, and the conductance can be expressed as a linear function of the T-matrix of the screening channel. For closed rings we show that at temperatures high compared to the Kondo temperature, the conductance behaves differently for temperatures above and below $v_F/L$ where $v_F$ is the Fermi velocity and $L$ is the circumference of the ring. For open rings, when the ring arms have both a small transmission and a small reflection, we show from the microscopic model that the ring behaves like a two-path interferometer, and that the Kondo temperature is unaffected by details of the ring. Our findings confirm that ABK rings are potentially useful in the detection of the size of the Kondo screening cloud, the $\pi/2$ scattering phase shift from the Kondo singlet, and the suppression of Aharonov-Bohm oscillations due to inelastic scattering.

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