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muSR study on quasi-one-dimensional cobalt/rhodium oxides PETER RUSSO, TRIUMF, JUN SUGIYAMA, H. NOZAKI, Y. IKEDO, K. MUKAI, Toyota CRDL, T. TAKAMI, University of Texas at Austin, H. IKUTA, DANIEL ANDREICA, ALEX AMATO, LMU-PSI — Thanks to the unique power of muon-spin spectroscopy, we found that the quasi-one-dimensional Co-Rh oxides $A_{n+2}\text{CoRh}_n\text{O}_{3n+3}$ (A=Ca, Sr; n=1, 2, and 3) exhibit a two-dimensional antiferromagnetic transition that ranges from $T_{\text{N}}^{\text{on}}=185$ K for n=1 to 125 K for n=3 with a transition width (ΔT) of about 80 K. The variation of T_{N}^{on} with n is explained by the increase in the distance between the neighboring $\text{CoRh}_n\text{O}_{3n+3}$ chains. Static magnetic order is observed below the endpoint of T_{N} ($=T_{\text{N}}^{\text{on}}-\Delta T$) for each of the three samples. The existence of the two-frequency components in the ZF-spectrum indicates the appearance of ferrimagnetic order for $\text{Ca}_3\text{CoRhO}_6$ below 20 K.

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