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C-axis transport of pnictide single crystals. YURI KOVAL, PAUL MUELLER, University Erlangen-Nuernberg, Germany, GUENTER BEHR, BERND BUECHNER, IFW Dresden, Germany — Mesa-type structures of $\sim 1 \mu\text{m}^2$ area were fabricated on the (ab) plane of small $\text{LaO}_{0.9}\text{F}_{0.1}\text{FeAs}$ single crystals. Resistance vs. temperature measurements showed a metallic behavior with a residual resistance ratio higher than 10. Both magnetic susceptibility and transport measurements showed the same value for the critical temperature, i.e. $\sim 20\text{K}$. Current-voltage characteristics are typical for overdamped Josephson junctions with a critical current density of $\sim 10^5 \text{ A/cm}^2$. Moreover, the critical current vs. temperature dependence follows the Ambegaokar-Baratoff relation for the maximum dc Josephson current. One possible explanation could be that we have observed an intrinsic Josephson effect in $\langle c \rangle$ -direction. This is supported by recent measurements of radiation emission between 11 and 12 GHz. Finally, we discuss current injection effects on Josephson critical current and T_c .

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