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Superconductivity in Spin-Chain Ladder Cuprate SHIGERU KOIKEGAMI, Second Lab, LLC, TAKASHI YANAGISAWA, Nanoelectronics Research Institute, AIST — We study the superconductivity in the three-dimensional d-p model with the quasi-one-dimensional structure in which CuO_2- chain and Cu_2O_3-ladder are alternately stacked with each other. When we control the hole density on each Cu site in our model, we have two or three Fermi surfaces, on which the fully- gapped superconductivity develops. Both the inter-band nesting and the large density of states around Van Hove singulality points play essential roles to achieve the superconductivity, and these two factors can coexist easily owing to the electron transfer between chain and ladder.

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