CCOPI: Implementing a custom coprocessor interface for VexRiscv

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I. Abstract

In this paper we introduce CCOPI, a custom coprocessor interface for the RISC-V implementation VexRiscv. CCOPI as well as VexRiscv is written in the hardware description language SpinalHDL. The interface is responsible for the communication between the coprocessor and the core CPU pipeline of VexRiscv and thus helps hardware developers in the designing process of a coprocessor with a custom instruction-set extension.

CCOPI uses the fexibility of the RISC-V implementation VexRiscv to create the interface. This paper also shows how VexRiscv is designed particulary with regard to modifications and custom extensions.

II. Introduction

References