Every Convolutional Code is a Goppa Code

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We show that every convolutional code is a CGC defined over a smooth curve over the field \( \mathbb{F}_q(z) \) and we give an explicit construction of convolutional codes as CGC over the projective line \( \mathbb{P}^1_{\mathbb{F}_q(z)} \). We characterize which convolutional codes are defined by a complete linear system over curves of genus 0, 1, and over hyperelliptic curves.

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