Covering maps over solenoids

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(joint work with joint work with K. Eda)

For a sequence $\boldsymbol{P} = (p_i)$ of prime numbers p_i, let $\Sigma_{\boldsymbol{P}}$ denote a solenoid generated by the sequence $\boldsymbol{P}$. We consider covering maps $f : X \to \Sigma_{\boldsymbol{P}}$ with a connected total space X. First, using shape-theoretic techniques and a Fox's notion of an overlay map, we examine finite-sheeted covering maps over $\Sigma_{\boldsymbol{P}}$. We show that , for $s \in \mathbb{N}$, $\Sigma_{\boldsymbol{P}}$ admits an s-sheeted covering map if and only if s is not divisible by primes which occur infinitely often in the sequence $\boldsymbol{P}$. Then, using $\boldsymbol{P}$-adic presentation of $\Sigma_{\boldsymbol{P}}$, we construct an infinite-sheeted covering map over $\Sigma_{\boldsymbol{P}}$.

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