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Some Infinite Product Identities Involving Fibonacci and Lucas Numbers,
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Abstract

We derive interesting general infinite product identities involving Fibonacci and Lucas numbers. Our procedure consists of applying the classic telescoping summation formula and its variants to identities involving inverse hyperbolic tangent functions having inverse powers of the golden ratio as arguments, thereby obtaining infinite summation identities. While taking into consideration subtle properties of the Fibonacci and Lucas numbers, the infinite summation identities are then converted to infinite product identities.