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Title: Additive irreducibles in α -expansions

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The Bergman number system uses the base $\alpha = \frac{1+\sqrt{5}}{2}$, the digits 0 and 1, and the condition that adjacent ones are forbidden. We are interested in those positive integers such that replacing one or more of the ones never results again in a positive integer; they are called (additively) irreducible. These numbers are characterised in terms of the positions of their ones. Further, the number of irreducible positive integers below a given bound is considered and evaluated asymptotically, as the bound goes to infinity. The periodic function that appears is analysed in detail.

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