Exposé court

124 ***On bi-periodic Horadam numbers***

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In this talk, we consider a generalization of the Fibonacci sequence, namely bi-periodic Horadam sequence $\{w_n\}$, which is defined by the recurrence relation:

$$w_n = a^{\xi(n+1)} b^{\xi(n)} w_{n-1} + c w_{n-2}, \quad n \geq 2,$$

with arbitrary initial values w_0, w_1. Here $\xi(n) = n - 2\left\lfloor \frac{n}{2} \right\rfloor$ is the parity function of n and a, b, c are nonzero real numbers. When $a = b = c = 1$ and $w_0 = 0, w_1 = 1$, the bi-periodic Horadam sequence reduces to the classical Fibonacci sequence. We introduce bi-periodic incomplete Horadam numbers which give a natural generalization of incomplete Fibonacci numbers and we give recurrence relations, generating function, and some basic properties of them.