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In 1983 Feingold-Frenkel studied the structure of a rank 3 hyperbolic Kac-Moody algebra \mathcal{F} containing the affine KM algebra $A_1^{(1)}$. In 2004 Feingold-Nicolai showed that \mathcal{F} contains all rank 2 hyperbolic KM algebras with symmetric Cartan matrices, $A = \begin{bmatrix} 2 & -a \\ -a & 2 \end{bmatrix}$, $a \geq 3$. The case when $a = 3$ is called *Fib* because of its connection with the Fibonacci numbers (Feingold 1980). Some important structural results about \mathcal{F} come from the decomposition with respect to its affine subalgebra $A_1^{(1)}$. Here we study the decomposition of \mathcal{F} with respect to its subalgebra *Fib*. This current work is joint with Diego Penta. (Received January 11, 2016)