## **Cyclic Hilbert Spaces**

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## Dedicated to Professor Andrei Neculai to his 60th birthday

Abstract: We analyse in this paper a concept related to the Connes Embedding Problem [Co]. A type  $II_1$  algebra is an algebra with a trace, and CEP requires for the multiplication to be approximated by matrices. Here we start the analysis of four products, which is the study of cyclic Hilbert spaces.