

1039-46-162

**Michael Anshelevich\***, Department of Mathematics, Texas A&M University, Mail Code 3368,  
College Station, TX 77843-3368. *Free evolution on algebras with two states*. Preliminary report.

In 2007, Belinschi and Nica described the relation between the following three objects.  $\{\gamma_t\}$  are the semicircular distributions, which form a semigroup with respect to the free convolution  $\boxplus$ .  $\Phi$  is a map on measures coming from the shift of their Jacobi coefficients. Finally,  $\mathbb{B}_t$  is another family of maps on measures, constructed using the free convolution  $\boxplus$  and Boolean convolution  $\boxplus$ , which form a semigroup, and which also have the property that  $\mathbb{B}_1$  maps all measures precisely onto the freely infinitely divisible ones.

Belinschi and Nica proved that for any measure  $\nu$ ,

$$\Phi[\nu \boxplus \gamma_t] = \mathbb{B}_t[\Phi[\nu]].$$

I will explain that this property is not special for the semicircular distributions. Namely, for any free convolution semigroup  $\{\rho_t\}$  I will describe a family of naturally occurring maps  $\Phi^\rho$  such that

$$\Phi^\rho[\nu \boxplus \rho_t] = \mathbb{B}_t[\Phi^\rho[\nu]].$$

The maps are constructed using an operator model, and the framework in which these maps arise is a relative of free probability for algebras with two states. (Received March 11, 2008)