Referee report for the manuscript:
title: Sweedlers duals and Schtzenbergers calculus
author: G. H. E. Duchamp, Ch. Tollu

I suppose that the core of the article is Section 6, which gives an application to Physics. I could not evaluate this part. The rest of the paper is devoted to summarize several well-known results on representatives functions and rational closure. It may serve as a point of departure for the researcher interested in applications of Combinatorics to Physics.

I would add the reference G. P. Hochschild, Basic theory of algebraic groups and Lie algebras, Springer 1981, where Prop. 1.1 is explicitly given (see Chapter 1, Prop. 1.3 of that book). Morover, the authors do not cite Sweedler's book, where representative functions were introduced. The fact that representative functions on a free monoid coincide with recognizable series has been known for long time to specialists.