For $\sigma \in S_c$ we have $|\sigma(a) - a| \leq c_\sigma$ and, therefore, obviously

$$|d(\sigma(p); a, b) - d(p; a, b)| \leq \frac{2c_\sigma}{|a-b|} \text{ for any } p.$$

Thus, for any two series a_i and b_i such that $|a_i - b_i| \longrightarrow \infty$ as $i \longrightarrow \infty$ all density limit points are σ-invariant.

Conjecturally, one can describe parity functions from Inf in terms of the density spectrum only for non-finite functions with the property that for some $c_p > 0$ there is no interval (a, b) with $b - a > c_p$ on which p is constant. In other words, the density spectrum $b - a >$of such p should be separated from 0 and 1. We will call such parity $b - a >$ functions tight.

A larger group, S_n, enables us to progress further:

Proposition If two parity functions have coinciding one-point left and right density spectra and are tight, these functions are S_n-equivalent.

Applications: **super Kadomtsev–Petviashvili** hierarchy, see [1].

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Dimitry Leites

LIE SUPERALGEBRA gl(λ) — The **Lie algebra** of "matrices of *complex size*" λ, as the **Lie algebra** constructed on the space of the associative algebra B_λ, the quotient of $U(\mathfrak{sl}(2))$ modulo the *central character* (the **ideal** generated by C_2-const), where C_2 is the quadratic Casimir element), by means of replacing the *dot product* with the bracket [1]. The associative algebra B_λ was known earlier [2].

The associative version, B_λ, did not draw much attention until recently when identified as a central simple algebra, see [4] for construction of central simple superalgebras important for **Morita equivalence** which, in turn, is important in **M-theory** [8].

The Lie version, $\mathfrak{gl}(\lambda)$, was interpreted as a simplest example of a new class of simple (modulo center) Lie (super)algebras: filtered of polynomial growth, see [3], where interpretations and defining relations are given; for representation see [5].

There can be several **supertraces** on generalizations of $\mathfrak{gl}(\lambda)$ [9]. Apart for such unexpected features, many properties of finite dimensional $\mathfrak{gl}(n)$ have analogs for $\mathfrak{gl}(\lambda)$.

In higher spin gauge theories superanalogs of $\mathfrak{gl}(\lambda)$ (quotient of $U(\mathfrak{osp}(1|2))$ modulo the *central character*) naturally appear [7]. For applications to orthogonal polynomials see [6].

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Dimitry Leites

Likhtman, Evgeny Pinkhasovich — (b. Jan. 12, 1946, Moscow, USSR) Together with Yuri Golfand constructed the first four-dimensional supersymmetric *field theory*, supersymmetric quantum electrodynamics with the mass term of the photon/photino fields, plus two chiral matter supermultiplets [1] (a more detailed version was published in [2]). Likhtman was the first to observe that the vacuum energy vanishes in supersymmetric *field theories*. On page 8 of [3] one can read, in particular: "As is known, in relativistic *quantum field theory*, in transforming the free energy operator to the normal-ordered form there emerges an infinite term which is interpreted as the vacuum energy. It is also known that the sign of this term is different for the particles subject to the *Bose statistics* and *Fermi statistics*. The number of the boson states is always equal to the number of the fermion states. From this it follows that the infinite positive energy of the boson states in any