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Errata: Exclusion Process and Droplet Shape[1]

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In the Introduction it was incorrectly stated that the asymptotic measure $\nu_\infty(\eta)$ of the exclusion process with initial measure $\nu_0(\eta)$ concentrated on the configuration

$$\eta_0(k)=\begin{cases}1 & k\leqslant 0\\ 0 & k>0\end{cases}$$

is a product measure. This error entails the following corrections:

Page 492, lines 6–14: The system behaves differently for $r=p/q$ larger or smaller than one. If $r\geqslant 1$, the system starting from η_0 approaches the product measure with density 1/2. If $r<1$; $\nu_\infty(\eta)$ is obtained by conditioning the product measure

$$\prod_{l:\eta(l)=1}\rho(l)\prod_{l:\eta(l)=0}[1-\rho(l)] \tag{1.1}$$

with

$$\rho(l)=r^l(1+r^l)^{-1} \tag{1.2}$$

on the set X_0 of configurations that can be reached from η_0.

Page 496, lines 5–6: Let Ω_0 be the set of configurations $\omega\in\Omega$ that can be reached from ω_0, and μ_∞ the equilibrium measure on Ω_0 (corresponding to ν_∞ on X_0).

Moreover, the last term of Eq. (2.3) on p. 497 should read $\frac{1}{2}c\prod_1^\infty(1+r^l)^{-2}$, and this implies that formula (2.7) must be replaced by

$$c=2\pi(1,\infty)\prod_1^\infty(1+r^l)^2 \tag{2.7}$$

[1] This paper appeared in *J. Stat. Phys.* **44**:491 (1986).

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Comments. The measure $\nu_\infty(\eta)$ differs from (1.1) by the multiplicative constant c introduced in Lemma 2.1, with the above value (2.7), and $\rho(l)$ is not equal to $\nu_\infty(\eta : \eta(l) = 1)$. The heuristic derivation of (3.3) presented on p. 501 is incorrect, since it uses $\rho(l)$ instead of the correct expression for $\nu_\infty(\eta : \eta(l) = 1)$, which is much more involved. But the formula (3.3) itself and the remainder of Section 3 are correct, since they are a consequence of the correct relation (Proposition 2.8)

$$b_k(n) = r^{kn} \pi(k, \infty)\, \pi^{-1}(1, n)$$

[with $\pi(1, 0) = 1$], which may be rederived more directly as follows:

Considering Fig. 1, one finds that the number of boundaries enclosing an area l are $q_l^{(k-1)}$ and $q_l^{(n)}$ for regions II and III, respectively. Hence the total weight of all boundaries satisfying $B_k(\omega) = n$ is [cf. Lemma 2.1, formula (2.6)]

$$\begin{aligned} b_k(n) &= \pi(1, \infty)\, r^{kn} \left(\sum_{l=0}^{\infty} q_l^{(k-1)} r^l \right) \left(\sum_{l=0}^{\infty} q_l^{(n)} r^l \right) \\ &= \pi(1, \infty)\, r^{kn}\, \hat{q}^{(k-1)}(r)\, \hat{q}^{(n)}(r) \end{aligned}$$

from which the result follows by (2.9).

As a final remark, we emphasize that the isomorphism between the processes $\nu_t(\eta)$ on X_0 and $\mu_t(\eta)$ on Ω_0 is due to H. Rost[2] for $p = 1$ and appears in Chapter VIII of Ref. 1 for general p.

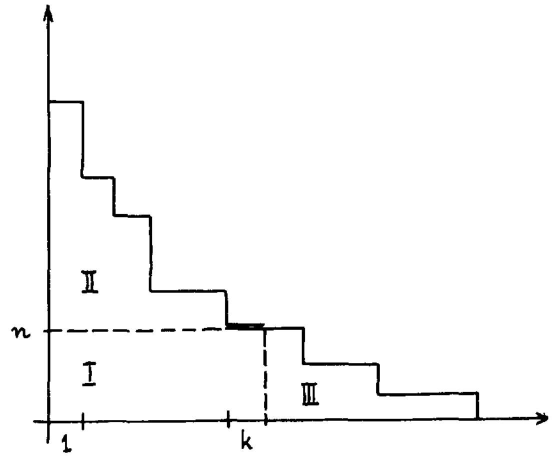

Fig. 1.

ACKNOWLEDGMENT

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REFERENCES

1. T. M. Liggett, Interacting Particle System, (Springer-Verlag, 1985).
2. H. Rost, *Z. Wahrsch. Verw. Gebiete* **58**:41 (1981).