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Stochastic Geometry of the O_2 Fermionic Strings.

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After the publication of the paper, I learnt that a treatment of this string model similar to the one in sect. **2** was previously given by FRADKIN and TSEYLIN [1,2]. These authors found that the sign of the kinetic term for the U_1 anomaly field (that is the B-field in our notation) is opposite to that of the conformal factor (the A-field). This result was confirmed by the authors of ref. [3]. Hence eq. (2.14) must be substituted by

$$W = \frac{-D}{8\pi}\int\Big\{(\partial_\mu A)^2 - (\partial_\mu B)^2 + \bar{\psi}\not{\partial}\psi + \mu^2 \exp[2\alpha A] + \\ + \Big[\alpha\mu \exp[\alpha A]\bar{\psi}\Big(\frac{1+\gamma_5}{2}\Big)\psi \exp[\alpha B] + \text{h.c.}\Big]\Big\}. \tag{1}$$

The same change is needed in eq. (2.21).

The other sections need no change, but they apply to the $N = 2$ super-Liouville model

$$\mathscr{L} = \tilde{\not{\partial}}\varphi^* \not{\partial}\varphi + \mu^2\big[\exp[\alpha\varphi]\big]^2 + \Big[\alpha\mu \exp[\alpha\varphi]\bar{\psi}\Big(\frac{1+\gamma_5}{2}\Big)\psi + \text{h.c.}\Big], \tag{2}$$

which, because of the difference in sign between eqs. (1), (2), does not correspond directly to the string model, as was erroneously stated in the paper. Of course, from the point of view of stochastic supersymmetry, the $N = 2$ super-Liouville model remains a very interesting system (for instance, it has $\Delta = \infty$, as we can see by solving the Schrödinger equation for its one-dimensional counterpart), even if is not related, in a direct way, to string theory.

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(1) E. S. FRADKIN and A. A. TSEYLIN: *Phys. Lett. B*, **106**, 63 (1981).
(2) E. S. FRADKIN and A. A. TSEYLIN: *Ann. Phys.* (*N. Y.*), 413 (1982).
(3) P. DI VECCHIA, B. DURHUUS, P. OLESEN and J. L. PETERSEN: *Nucl. Phys. B*, **217**, 195 (1982).