ERRATUM

Shielding a confining potential

To cite this article: G. Calucci 2005 *EPL* **70** 562

EUROPHYSICS LETTERS 15 May 2005

Europhys. Lett., **70** (4), p. 562 (2005)

DOI: 10.1209/epl/i2005-10038-x

Erratum

Shielding a confining potential

G. CALUCCI(*)

Dipartimento di Fisica Teorica dell'Università di Trieste and INFN, Sezione di Trieste - I-34014 Trieste, Italy

(*Europhys. Lett.*, **70** (1), pp. 77–80 (2005))

PACS. 12.38.Mh – Quark-gluon plasma.
PACS. 12.39.Pn – Potential models.

There is a trivial but important error of sign in eq. (6b); its correct form is

$$\omega_D + \omega_P = \frac{16\pi\beta}{k^4\ell^2 - 8\pi\beta n}\,. \tag{6b}$$

It follows that the correlations functions in the r-space are

$$\omega_D = \frac{1}{r}\left[\alpha\beta\exp\left[-\sqrt{4\pi\alpha\beta n}\,r\right] + \frac{1}{\ell}\sqrt{\frac{\beta}{8\pi n}}\left(\cos\left[\sqrt[4]{8\pi\beta n/\ell^2}\,r\right] - \exp\left[-\sqrt[4]{8\pi\beta n/\ell^2}\,r\right]\right)\right], \tag{7a}$$

$$\omega_P = \frac{1}{r}\left[-\alpha\beta\exp\left[-\sqrt{4\pi\alpha\beta n}\,r\right] + \frac{1}{\ell}\sqrt{\frac{\beta}{8\pi n}}\left(\cos\left[\sqrt[4]{8\pi\beta n/\ell^2}\,r\right] - \exp\left[-\sqrt[4]{8\pi\beta n/\ell^2}\,r\right]\right)\right]. \tag{7b}$$

As a consequence, one finds that the two-body correlation functions have an oscillating term which is not damped (if not for the geometrical factor $1/r$). Since the physical system is anyhow finite in space, this causes no problems in eq. (3), but it shows that a phenomenological confining potential has an effect very different from a Coulomb-like interaction.

(*) E-mail: giorgio@ts.infn.it