ERRATUM

Erratum to: Deriving respiration from photoplethysmographic pulse width

**Jesús Lázaro · Eduardo Gil · Raquel Bailón ·
Ana Mincholé · Pablo Laguna**

Erratum to: Med Biol Eng Comput DOI 10.1007/s11517-012-0954-0

Due to an equations formatting error, the presentation of some expressions was incorrect. A list of these expressions is given below:

Sect. 2.3, ninth paragraph: $d_s^P(n)$ should be read as $d_{BRV}^u(n)$.

Sect. 3.1, second paragraph: $d_s^P(n)$ should be read as $d_{PWV}^u(n)$.

Table 2: The correct table is given at the end of this erratum.

Sect. 2.4, third paragraph: $f_s^P(j, k)$ should be read as $f_P^I(j, k)$.

Sect. 2.4, fifth and sixth paragraphs: The corrected paragraphs are given below.

In the averaged spectrum $\bar{S}_k(f)$ the algorithm also searches the largest peak [denoted $f_p^{I_a}(k)$] and $f_p^{II_a}(k)$ defined as the nearest to $f_R(k-1)$ inside the interval $\Omega_R(k)$ which is at least larger than 85 % of $f_p^{I_a}(k)$. At this time the reference frequency $f_R(k)$ can be updated as:

$$f_R(k) = \beta f_R(k-1) + (1 - \beta) f_p(k) \tag{21}$$

where β denotes the forgetting factor and $f_p(k)$ is defined by

$$f_p(k) = \begin{cases} f_p^{II_a}(k), & \exists f_p^{II_a}(k) \\ f_p^{I_a}(k), & \text{otherwise} \end{cases} \tag{22}$$

Finally, estimated respiration rate $\hat{f}(k)$ is defined as:

$$\hat{f}(k) = \alpha \hat{f}(k-1) + (1 - \alpha) f_p(k) \tag{23}$$

$$\alpha = \begin{cases} \alpha_2, & \exists f_p^{II_a}(k) \\ \alpha_1, & \text{otherwise} \end{cases} \tag{24}$$

where $\alpha_2 \leq \alpha_1$, providing more memory when $f_p^{II_a}(k)$ could not be set.

Table 2 Percentage of utilization of each DR signal in combination of PRV, PAV and PWV

Group	Percentage of use (%)		
	PRV	PAV	PWV
$\bar{f}_{RES} \geq 0.15$ Hz	48.24	37.80	67.63
$\bar{f}_{RES} < 0.15$ Hz	59.77	61.27	42.41
All	52.31	46.08	58.73

J. Lázaro (✉) · E. Gil · R. Bailón · A. Mincholé · P. Laguna
Communications Technology Group (GTC), Aragón Institute
of Engineering Research (I3A), IIS Aragón, Universidad de
Zaragoza, Zaragoza, Spain
e-mail: jlazarop@unizar.es

J. Lázaro · E. Gil · R. Bailón · A. Mincholé · P. Laguna
Centro de Investigación Biomédica en Red en Bioingeniería,
Biomateriales y Nanomedicina (CIBER-BBN), Zaragoza, Spain