Erratum

Functional determinants and geometry

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The author would like to thank D. Burghelea and T. Kappeler for pointing out the existence of an error in the paper *Functional determinants and geometry*, Invent. Math. 88, 447–493 (1987). The error occurs in part 2 of Lemma 3.1, which should read:

2. If n is odd then for each x there is some projection π_x such that

$$\lim_{s \rightarrow 0} (L^{-sf})(x) = \frac{1}{n} [\pi_x f(x+) + (1 - \pi_x) f(x-)] .$$

The rest of the lemma remains as is. The mistake occurs at the top of p. 478, which should read:

$$\lim_{s \rightarrow 0} \pm \sum_{k=1}^{\infty} \frac{1}{i(k)^{1+sn}} (e^{i\frac{\pi}{2}s} - e^{-i\frac{\pi}{2}s}) = \lim_{s \rightarrow 0} \pm \left(2 \sin \left(\frac{\pi}{2} s \right) \right) \sum_{k=1}^{\infty} \frac{1}{k^{1+sn}}$$

with the sign being $+1$ or -1 if $n \equiv 1 \pmod{4}$ or $n \equiv 3 \pmod{4}$ resp. The simple estimate

$$\frac{1}{sn} = \int_1^{\infty} x^{-(1+sn)} dx < \sum_{k=1}^{\infty} \frac{1}{k^{1+sn}} < 1 + \int_1^{\infty} x^{-(1+sn)} dx = 1 + \frac{1}{sn}$$

shows that

$$\lim_{s \rightarrow 0} (L^{-sf})(x) = \lim_{s \rightarrow 0} \pm \left(2 \sin \left(\frac{\pi}{2} s \right) \right) \sum_{k=1}^{\infty} \frac{1}{k^{1+sn}} = \pm \frac{\pi}{n} = \frac{1}{n} \lim_{x \rightarrow \pi^{\mp}} h(x) .$$

The remainder of the proof proceeds as before. There is a corresponding change in the definition of $R(x)$ given in formula (4)

$$R(x) = \begin{cases} \frac{1}{2} & \text{if } n \text{ is even} \\ \frac{\pi_x}{n} & \text{if } n \text{ is odd} . \end{cases} \quad (4)$$

Similarly, in the case of n odd, in all formulae between statement (4) (bottom p. 478) and statement (5) (top p. 480), the term

$$(1 - R(x))$$

should be replaced by

$$\left(\frac{1}{n} - R(x)\right) = \frac{1 - \pi_x}{n}.$$

These changes do not at all affect the examples considered in the paper.