Corrections to PCMI Lectures

I am grateful to Guowei Zhao, Gordon Slade and Fabio Toninelli for the most important of the corrections given here. The page numbers refer to the pdf file that accompanies these corrections where the corrections are shown in red, in some cases by footnotes.

page 16 below Theorem 1.12. $e^{iq\varphi_0(x)}$ should be $e^{iq\varphi(x)}$.

Page 19 below (1.69) In Sec 1.9.2 the claim "for any $\kappa < m$ is wrong. The actual rate of exponential decay is m_0 which satisfies: $\cosh m_0 = 1 + m^2/2$. So $m_0 \sim m$ as $m \to 0$, but for large m the decay rate is logarithmic in m.

page 31 Theorem 2.16 add "at an exponential rate" to the end of the last sentence in this theorem.

page 31, above (2.39) replace "whose points are sequences" by "whose points are exponentially decaying sequences".

page 38, above (3.13) replace $r \in \mathcal{B}_j$ by $r \in \mathcal{B}_{j+1}$.

page 39, (3.19) Apologies for the confusion between B as a coefficient in Theorem 2.16 and as a block in (3.19).

page 40, Remark 3.6 replace "prove that the scaling limit" by "prove that the scaling limit (1.9)".

page 41, Prop 3.7. replace $(\mathrm{RG})^n$ in third line by $(\mathrm{RG})^j$.

page 42 The statement "under (RG) evolution a nonzero $q = 0$ term appears in I" is false unless $z \neq 0$. The $z \neq 0$ hypothesis must also be added to Proposition 3.8.

page 58 line 7. Replace (I, I) by (I, K).

page 62 top. Replace $K(X_i)$ under $\sum_i$ three times by $K_i(X_i)$.

page 63, Lemma 6.3. Erase the little c in the phrase $X \in \mathcal{P}_{j,c}$, i.e, should be $X \in \mathcal{P}_j$.

Lemma 6.3 follows from part (e) of the proof by factorization property of $\check{K}(X)$.

Page 74 r.h.s of (6.80,81) $2^d|\chi|$ should be $2^d S|\chi|$ and in (6.82,83,84,85) $a2^{d+1}n$ should be $a2^{d+1}Sn$. (Corrected in red in pdf file)

page 77, (6.104). The last term should be $\sum_{B \in \mathcal{B}_j(X)} \|\nabla_j \phi'\|_{L_j^2(\partial B)}$.

page 79, First line. $B \in \mathcal{B}_{j+1}(X)$ should be $B \in \mathcal{B}_j(X)$.

page 79, (6.113), second line. There should be no p in the index, and X should be ∂X, i.e this line should be

$$= \|\nabla_{j+1} f\|_{L_{j+1}^2(\partial X)}^2$$