Errata of 'Advanced Spatial Modeling with SPDE Using R and INLA'

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This documents lists the errata found in the printed edition of the book *Advanced Spatial Modeling with SPDE Using R and INLA* by E.T. Krainsi et al. and published by CRC Press/Taylor and Francis. These errata have been fixed in the on-line version of the book.

- Some minor typos have been fixed in the text.
- Pages 30-32, Section 1.6.3. The example about the 'replicate' model has been modified because the `linear` latent effect does not allow for replication. It has been replaced by an `iid` latent effect and the example modified accordingly. Note that this is a naïve example to illustrate the use of the 'replicate' feature.
- Page 43, the fourth line "n=250" instead of "n=249".
- Page 51, fifth line: "six piece-wise linear basis functions" should be "seven piece-wise linear basis functions"
- Page 53, Section 2.2.2. The text has been ammended to note that, as the matrix $\mathbf{C}$ is dense, it can be replaced by a diagonal matrix $\tilde{\mathbf{C}}$ and that, similarly, $\mathbf{C}^{-1}$ can be replaced by $\tilde{\mathbf{C}}^{-1}$.
- Page 69, the second line of the second paragraph: should be "0.8 to 2.4".
- Page 89, the second line of the first paragraph: "July 2011" should be "January 2011"
- Page 95, the seventh line of the first paragraph: "top-left plot" should be "top-right plot"
- Page 118, Section 3.2.2. When setting the priors on the two precisions of the two Gaussian likelihood the parameter name used is `theta` but it should be `prec`. This affects variables `hfix` and `pprec`. The code should read:

```
hfix <- list(hyper = list(prec = list(initial = 20,
  fixed = TRUE)))
```

```
pprec <- list(hyper = list(prec = list(prior = 'pc.prec',
  param = c(0.2, 0.5))))
```

- Page 155, Section 5.1.4. The code to set the prior on the precision uses the parameter name `prec` instead of `theta`. This affects variable `clik`. The code reads:

```
clik <- list(hyper = list(prec = list(initial = 20,
  fixed = TRUE)))
```

- Page 217, Section 7.3.2. Fixed an imprecise statement. There is no adaptive *Gaussian* approximation. It should read:

In particular, the adaptive approximation (`strategy = 'adaptive'`) and the Empirical Bayes integration strategy over the hyperparameters (`int.strategy = 'eb'`) will be used.

- Page 248, Section 8.4.1. The `owin()` function is now part of package `spatstat.geom`. Hence, `spatstat:::owin` has been replaced by `spatstat.geom:::owin` in the `R` code:

```
if(require("lgcp", quietly = TRUE)) {
    mpars <- lgcppars(sigma, phi, theta, mu - sigma^2/2)
    set.seed(1)
    xyt <- lgcpSim(
      owin = spatstat.geom:::owin(poly = domain), tlim = c(0, ndays),
      model.parameters = mpars, cellwidth = 0.1,
      spatial.covmodel = 'matern', covpars = c(nu = 1))
  #save("xyt", file="data/xyt.RData")
} else {
  load("data/xyt.RData")
}

n <- xyt$n
```

- Page 256, Section 8.5.1. The Binomial distribution is defined with respect to $\pi_{i,t}$ in equation (8.3). However, in the subsequent sentence, it references $p_{i,t}$, which should really be $\pi_{i,t}$. In addition, the expected value of the rainfall is defined as $p_{i,t} + (1 - p_{i,t})\mu_{i,t}$, which should just be $\pi_{i,t}\mu_{i,t}$. Finally, in the next sentence in the text there is another $p_{i,t}$ which should be replaced by $\pi_{i,t}$.

  To clarify, the full paragraph where the typos are should read like this:

  This setting is equivalent to consider a Hurdle-Gamma model where we have the expected value of the rainfall as $\pi_{i,t}\mu_{i,t}$, where $\mu_{i,t}$ is the expected value for the Gamma part. Next, we define the model for $\pi_{i,t}$ and $\mu_{i,t}$.