

Dear Sir,

We would like to begin by thanking you and the two Referees for all of your efforts with this manuscript. The comments have been constructive and we have incorporated suggestions made by the Referees. As a result of these revisions, we believe that this revised version has substantially improved the original manuscript. Please find detailed responses to each of the Referee comments below.

Yours sincerely,

Enric Vázquez-Suñé and co-workers

RESPONSE TO REVIEWER'S COMMENTS

We respond below to the comments made by both Referees. To facilitate reading we have pasted the original comments in *italics* and our responses in blue standard font.

REFEREE #1

The work presented is completely relevant for the management of water resources, and of high interest for the scientific community.

The manuscript is synthetic and well written, with a complete list of references.

We would like to begin by thanking the referee for his/her efforts, and we are very pleased for the overall positive assessment.

I recommend to consider the following general observations to improve the manuscript, as well as the specific comments and technical corrections, specified all with comment notes in the attached pdf file:

We have addressed most of the specific comments and technical corrections in the manuscript following referee's suggestions.

a) To complete Chapter 3 by explaining the general workflow presented in Figure 2 and how the model was built.

We have rewritten some parts of this chapter in order to better explain the general work flow and to present a more detailed methodology for the model construction.

b) To include a geological map of the study area at a more regional scale, including geological elements commented in the text.

We include a new general geological map of the study area.

c) Improve the figures (including scales, enlarging some of them, reviewing the legends, etc.).

We have improved the majority of the figures following referee's suggestions.

REFEREE #2

General Comments

The article deals with an interesting issue as the geological knowledge in urban areas and its influence in groundwater resources management. Now a days, this is an important problems worldwide and novel approaches need to be found. The proposed methodology and the key point of including the administrative bodies highlight the advances proposed for this article.

We would like to begin by thanking the referee for his/her efforts, and we are very pleased for the overall positive assessment.

However, the article does not follow a clear structure and seeming some time that your are reading another article when you change the section. In order to improve its impact, there are some major and minor points that need to be discussed/improved before its publication. The most important issues are the following:

- a) *It is necessary an interrelation between the different sections of the article, being the most important linking properly the discussion with the previous sections. This is particularly relevant for the discussion.*

We agree with the referee's comment. For a better link between the previous sections and the discussion, we have rewritten some parts of the article (Introduction (chapter 1), Materials and methods (chapter 3), geological model (chapter 4) and the discussion (chapter 4). We believe that this revised version has substantially improved the original manuscript.

- b) *An improvement of the state of the art is needed as there many papers dealing with urban geology not mentioned in this article. It is necessary emphasize what is improving this study compared with many available.*

Thanks. As the referee suggests, there are additional works that are interesting and relevant to be included in the manuscript. We have considered and referenced them in the manuscript.

- c) *It is necessary to clarify the objectives and follow them along the text. From my point for view there are three clear key points: 1) integrate the information to construct a robust geological model in a urban area and 2) use this information to improve aquifer management and 3) show the importance of collaborating with the government/administration. However, along the text some sections refer more to point 1) and others to 2) and 3). The explanation should be clearer in this way.*

As explained before we have rewritten some sections of the paper. This includes a better statement of the objectives and their development along the text.

d) The proposed model is based in many reports of previous studies and the administration. It is necessary to explain in more detail what is the information contained in these reports and how it has been integrated into the geological model.

We agree. We have included more information about the available surveys and data, and also about the methodology and the tools used to integrate that data into the geological model. (Item: 3.2. New data acquisition and methodology)

e) Other minor issues that should be addressed.

We have addressed most of the specific comments and technical corrections in the manuscript following referee's suggestions.