Reviewer: The manuscript is very important to understand the hydrological process of soil water movement. But, a lot of incorrect grammar and irregular writing make the manuscript difficult to be undertood. For example, commas in some sentences appear at unexpected places and some sentences are incorrect in tense, incomplete or lengthy.

Authors: Thank you for your comments, the grammar will be corrected and checked by a native English speaking editor

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Reviewer: What are the characteristics of water repellent soil? What is the difference of infiltration process for water repellent soil and non-water repellent soil? What are the main factors affecting the two processes? The manuscript lacks description or understanding of these basic problems.

Authors: Strictly speaking water repellent soils are soils in which water doesn't infiltrate spontaneously, but forms drops at the soil surface because the contact angle α_w is higher than 90º, whereas usually perfect wettability is considered with $\alpha_w = 0º$. In this paper, we explored infiltration for non-zero contact angles (from 0 to 90°) and for contact angles superior to 90°. Typically infiltration in a water repellent soil will show an infiltration curve with an inverted curve. For a normal infiltration, the transient part of the infiltration curve is concave: starting fast and decelerating progressively (following a square root of time function). The infiltration curve in water repellent soil is convex, starting slowly until the gravitational pressure head increases enough to counteract the water repellency. This explanation will be added to the manuscript.

Reviewer: Why do the author employ the capillary model and the pearl necklace model to describe the influence of the contact angle on water repellence? Both models generalize soil particles as spheres, but in fact, soil particles are irregular thin slices. Can such distorted generalization better describe the relationship between soil particles?

Authors: Indeed the cylindrical and spherical (pearl neckless) models are not meant to represent the real shape of the pores in soil between soil particles. The pearl neckless model more specifically is aimed at demonstrating the importance of varying pore size between the bottleneck to access the actual inter particular voids.
On the other hand, it should also be noticed that except in pure clayey soils, the soil particles are rather spherical. In clayey soils, the particles are more like platelets but they tend to aggregate and form rounded shapes.

Reviewer: There is no infiltration experimental data in the manuscript. How to verify the improved models?

Authors: No experimental infiltration results are presented in this manuscript as the models, especially the PN model, have been successfully validated in a large variety of non-hydrophobic soils (Hammecker et al. 2004). The aim of the manuscript is actually to evaluate numerically the incidence of increasing contact angle on this infiltration model.

Reviewer: According to a1 of A/A0 from the Pearl necklace in Table 1, Should the contents between lines 195 and 200 belonge to Section 3.1.2.

Authors: Indeed this development could probably also belong to section 3.1.2. It will be moved in the new version of the manuscript.

Reviewer: Line 206 "This result is one of the novelty of this study", What is the novelty? and please clearly illustrate is the contribution of the novelty to describe the infiltration into water repellent soils?

Authors: The novelty pointed out here is the fact that with increasing contact angle the constant infiltration rate also increases, which seems counterintuitive. But this sentence might be improved with more details in the new version of the manuscript.

Reviewer: Equation (17) may be wrong. According to the formulas Ïµ1 and Ïµ2, it should be writen as ha=2*sqrt(R2-ra2)-R? But according to Figure 1, Equation (17) seems to be correct.

Authors: Equation 17 derives from the heights ε_1 and ε_2 of the sphere with radius R where the pore access radius ra intersects the sphere in the upper and lower part. Consequently the height of the truncated sphere is the difference;

$$\varepsilon_1 = R+\sqrt{R^2-r_a^{\,2}}$$

$$\varepsilon_2 = R-\sqrt{R^2-r_a^{\,2}}$$

$$\varepsilon_1-\varepsilon_2 = R+\sqrt{R^2-r_a^{\,2}}-\left(R-\sqrt{R^2-r_a^{\,2}}\right)=2\cdot\sqrt{R^2-r_a^{\,2}}$$
