

Reviewer #3: Interesting work showing the simulation of a molten metal pool during laser welding. These are basic research that requires further development and confirmation in further simulation studies using specialized software and subsequent laser remelting tests. In my opinion, the work can be published as a work showing the possibility of using this type of modeling for the preliminary assessment of the molten metal pool during laser welding.

*Response:* Thank you for your comment and suggestion. The purpose of our manuscript is to make a useful attempt to seek an effective experimental method to study the influence of the pressure in the keyhole on the keyhole shape by means of producing an analogy keyhole in liquid materials by blowing focused high speed gas, and then to build the relationship between the pressure in the keyhole together with the physical properties of the material and the keyhole shape in deep penetration laser welding based on similar laws of keyhole shapes, which can overcome the difficulties of directly detecting the pressure in the keyhole in real deep penetration laser welding. The analogy method proposed in this manuscript together with the corresponding results will lay the foundation for further development and confirmation in further simulation studies using specialized software and subsequent laser remelting tests.