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## Investigation of the pinch-time dependence to the gas pressure, in Filippov type plasma focus devices

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### Abstract

This paper has been prepared by using experimental and simulated data obtained from a large and a small Filippov type plasma focus devices. In the first part of the paper, the plasma-focusing phenomenon is introduced and the parameters of the devices are presented. Then, the results of empirical studies of the pinch-time dependence to the gas pressure are provided. In the next part, the theoretical basis of the ML-model is reviewed and the results of applying this model to simulate the two devices are presented. Both simulated and experimental results showed that in the larger device, the pinch time is clearly more sensitive to the pressure variations. The study also showed that probably the model predictions for larger device are more accurate than the predictions for the smaller device.

**Keywords:** plasma focus, Filippov, ML model, gas pressure, pinch time

For full article, refer to the Persian section