

Abstract Submitted  
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**Innovative method for greatly reducing fluid flow resistance<sup>1</sup>**

WEIYI LIN, Independent Investigator of Gravity Pipe Flow under the action of Torricelli's Vacuum, P.R.China — In this paper, firstly, the aerated pipe flow experiment is introduced. And some experimental research on comparison between different volume of air entrained is presented. Secondly, the technical characteristics of gravity pipe flow under the action of Torricelli's vacuum, shortly called as GPFUTV are dissertated, including creative and functional design, fundamental principle and the strange energy loss phenomena, etc. The detailed information on energy loss of water flow under GPFUTV's condition please find the attached YongAn Water Plant Test Report August 1997 and ShiLong District Reservoir Diversion Project Test Report April 2007. Thirdly, an appeal in relation to the experimental research, the applied studies and basic theory research is given. For instance, Reynolds' experiment and Nikuradze's experiments under GPFUTV's condition, the use of GPFUTV instead of lifting pump in DOW project and deep ocean mining project, flow stability and flow resistance under GPFUTV's condition, etc. At last, the application of GPFUTV in reservoir release control is is illustrated.

<sup>1</sup>When the gravity pipe flow changes into GPFUTV with all the vent valves closed, the capability of water supply would be greatly raised up.

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