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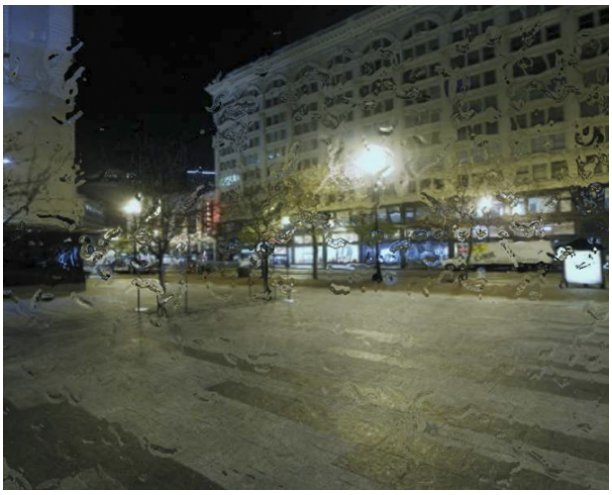
A Model for Real-Time On-Surface Flows

El-Hajjar, Jean-Francois; Jolivet, Vincent; Ghazanfarpour, Djamchid; Pueyo, Xavier



We present a novel empirical method for the animation of liquid droplets lying on a flat surface, the core of our technique being a simulation operating on a 2D grid which is implementable on GPU. The wetted surface can freely be oriented in space and is not limited to translucent materials, the liquid flow being governed by external forces, the viscosity parameter and the presence of obstacles. Furthermore, we show how to simply incorporate in our simulation scheme two enriching visual effects, namely absorption and ink transport. Rendering can be achieved from an arbitrary view point using a GPU image based ray-casting approach and takes into account the refraction and reflection of light. Even though our method doesnâ€™t benefit from the literature of fluid mechanics, we show that convincing animations in terms of realism can be achieved in real-time.

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