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RECONSTRUCTON ANALYSIS OF EXTRAORDINARY VEHICLE ACCIDENTS UTILIZING 3-D VISUAL EFFECTS

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ABSTRACT

Because dynamic movement of the collision occurs according to physical law for the most common types of vehicle accidents, except for extraordinary accidents, conventional dynamic simulation reconstruction might be used for explanation. Simple accidents can be easily explained with an appropriate sketch of the accident situation. For most commonly used reconstruction tools, 2-D tools such as top view are sufficient enough to analyze the accident. However, extraordinary accidents that occurred in 3-D environment cannot be fully reconstructed with 2-D tools nor can be easily explained. For example, if two objects are moving towards different direction at the same time in 3-D setting, it is very difficult to explain using 2-D reconstruction tools.
Through accident case study, we can see that for extraordinary accidents that digress from traditional accident types, using 3-D animation tools can achieve visual accident reconstruction, which can also increase credibility. This can also solve limitation of language in communication, reconstruction of crime disguised as vehicle accident and visual problems in 2-D reconstruction. Also, 3-D graphic animation can enhance reconstruction effects by making reconstruction of detailed testimony and intangible physical phenomenon possible, which can help testing appropriateness of testimony and various visual/space tests.
In conclusion, 3-D visual animation is very effective in accident reconstruction and we can see this can be highly utilized in accident interpretation. We can anticipate high usefulness of improving current 3-D visual program so that it can be more conveniently and technically used in accident reconstruction.