The Application of Collision Damage Analysis in Reconstruction of Sedan-Scooter Accidents

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Abstract : Objective: This study analyzed three criminal judicial cases. We applied the damage analysis of the two vehicles to verify other evidence, such as dashboard camera records of each accident, reconstruct the scenes, and pursue the truth. Methods: Evidence analysis, the method is to collect evidence and the reason for the results in judicial procedures, then analyze the involved damage evidence to verify other evidence. The collision damage analysis method is to inspect the damage to the vehicles and utilize the principles of tool mark analysis, Newtonian physics, and vehicle structure to understand the relevant factors when the vehicles collide. Results: Case 1: Sedan A turned right at the T junction and collided with Scooter B, which was going straight on the left road. The dashboard camera records showed that the left side of Sedan A's front bumper collided with the body of Scooter B and rider B. After the analysis of the study, the truth was that the front of the left side of Sedan A impacted the right pedal of Scooter B and the right lower limb of rider B. Case 2: Sedan C collided with Scooter D on the left road at the crossroads. The dashboard camera record showed that the left side of the Sedan C's front bumper collided with the body of Scooter D and rider D. After the analysis of the study, the truth was that the left side of the Sedan C impacted the left side of the car body and the front wheel of Scooter D and rider D. Case 3: Sedan E collided with Scooter F on the right road at the crossroads. The dashboard camera record showed that the right side of the Sedan E's front bumper collided with the body of Scooter F and rider F. After the analysis of the study, the truth was that the right side of the front bumper and the right side of the Sedan F impacted the Scooter. Conclusion: The application of collision damage analysis in the reconstruction of a sedan-scooter collision could discover the truth and provide the basis for judicial justice. The cases and methods could be the reference for the road safety policy.
Keywords : evidence analysis, collision damage analysis, accident reconstruction, sedan-scooter collision, dashboard camera records
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