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BLACK SPOT OVERLAP MATCHING FOR MOTORCYCLES AND CARS

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This research determines the size of the location-specific component of motorcycle crashes by comparing the degree of overlap between car and motorcycle crash rates at the same or similar locations drawn from the NZ crash record contained in the CAS database. Around 50 000 crash records are considered from 1980 to 2011. There is a strong correlation between the total number of car crashes and motorcycle crashes at the same locations, $r(250)=0.567$ $p<0.0001$. The usual method of 'ranking' and 'selecting' the worst sites is developed by using rate of car crashes to estimate the expected rates motorcycle crashes within a regression analysis (estimated Motorcycle crashes= $5.4+0.051$) (car crashes). Rates of motorcycle crashes are produced for specific sites and contrasted with the actual observed rates of motorcycle crashes at the worst-ranked 250 locations. Sites were rank-ordered by the degree of departure from the expected rates by calculating the standardised adjusted residual, and those outside 1.96 (ie, the 95th percentile) were group as the 'worst sites'. These sites are significantly different from the remaining sites with increased odds of a motorcycle crash around 1.65–1.95 greater than the remaining sites. This analysis detects that there are site-specific features that elevate the risk of a motorcycle crash by around 80% when considering 300 m sections of road. The technique develops opportunities for additional analyses that might reveal the unique features of sites that especially elevate the risk of motorcycle crashes.