# A Probabilistic Approach to Evaluate Safety During Intergreen Interval 

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Key words: signalized Intersection, intergreen, safety
 in the context of Japan traffic, while accounting for the random nature of traffic

## Methodology

## - Traffic Conflict Technique (TCT)

| $R=P \times I$ |  |
| :--- | :---: |
| Where, $R=$ risk evaluation, $P=o c c u r r i n g$ |  |
| possibility, $I=$ conflict severity |  |

- Proposed Conflict Severity Measuré
PET=Y+AR+ $t_{e}-T_{e}-t_{c}-\tau$

Where, PET=Post Encroachment Time (PET) with the change of phase; $S_{e}=$ entering distance; $S_{c}=$ clearing distance; $\quad V_{c}=$ clearing speed; $V_{e}=$ entering speed; $t_{c}=$ clearing time; $t_{e}=$ entering time; $T_{e}=$ entry time of the last cleared vehicle; $Y=y e l l o w ~ t i m e ; ~ A R=$ all-red time; $L=$ vehicle length; $\tau=$ starting response time


## Data

- Necessary data: traffic volumes; signal timing and geometric parameters; driver behavior ( $V_{c}, T_{e}, \ldots$ )
- Data collection method: video recording; reduction by image processing program
- Obtained Data: 3 typical intersections in Germany and 12 in Japan; at least 2 h video for each site.


## Case Studies



