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SEISMIC INTENSITY QUESTIONNAIRE SURVEY FOR 2 CALIFORNIA  
EARTHQUAKES

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We conducted a questionnaire survey to evaluate Modified Mercalli  
intensity of the 1984 Morgan Hill earthquake (Apr. 24, ML=6.2,  
Imax=7) and the 1986 Hollister earthquake (Jan. 26, ML=5.5) which  
occurred in the same region. Using 26 local public schools we  
distributed 2600 questionnaires to parents in late April, 1986.  
In May and June eleven schools returned a total of 673  
questionnaires.

Each questionnaire contains 34 questions regarding the  
respondent's location at the time of the earthquake, the strength  
of the shaking, and the damage to the surroundings. An intensity  
coefficient is assigned to each item category according to the  
Modified Mercalli intensity definition. To evaluate intensity  
from a questionnaire, we used two methods: taking the maximum of  
effective items; and taking the average of those items.

Results: Calculated intensities correlated with the strong mo-  
tion records of the Morgan Hill earthquake (7 PGAs ranging from  
0.06g to 0.31g). Calculated "maximum" intensities are close to  
the observations by seismologists but the "average" values are  
smaller than the observations by 1-1.5. We account for this dis-  
crepancy in "average" values because the specialists attend more  
to the severe damage and less to the absense of damage in the  
field.

This method will help clarify the reasoning and the procedure of  
intensity evaluation, make it more objective and reliable, and  
also define the relative intensity difference in the neighboring  
communities.