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GPS Dementia In Vehicle Tracking And Earthquake Detection

Dr. M.Inbavalli[1], M.Muniraj[2]& L. Mani Kandan[3]

ABSTRACT

The GPS (Global Positioning System) provides a security system for vehicle tracking which allows immediate response in case of vehicle theft, an accident, or other emergency. Tracking functions are provided through Mobile Units (GPS) installed in hidden locations in vehicles to be monitored. The Mobile Units communicate with a Control Center. General practice is widely reported in crisis. Particular concerns the recruitment and retention of doctors. An application in route choice modeling using Global Positioning System(GPS) data. Movie of wave propagation, GPS seismic displacements, rupture velocity, waveform comparisons, geological and 3D seismic structure and moment rate function. Use surface deformation measurements that includes Interferometric Synthetic Aperture Radar data acquired by ALOS-2 mission of the Japanese Aerospace Exploration and GPS data to invert for the fault geometry.

Keywords: Recruitment, GPS data, Vehicle tracking, Location

1. INTRODUCTION

We become aware of the drivers fatigue using and vehicle theft activity which causes social real time difficulty like accidents and many more hazards stipulations. We everyday see or read such type of movements that are elevating the query of our security and safety in both public and confidential sectors. The Mw 7.8 Gorkha (Nepal) earthquake on 25th April 2015 in the central Himalaya, on a tectonic boundary resulted from the India-Eurasia collision. It caused more than 8500 fatalities and was the largest seismic event since the 1956 Assam-Tibet Nepal Mw 8.6 earthquake along Himalayan arc [Bilham et al., 2001]. The Centroid Moment Tensor (CMT) solution and preliminary finite fault inversions of seismic data suggested that the earthquake rupture occurred along a NWW trending fault with a primarily thrust mechanism. In this paper we use observation of surface deformation from GPS (Global Positioning System)and synthetic aperture radar(SAR) collected by ALOS-2 satellite of the Japanese Space Agency to derive the slip distribution.[1][4]

Dr. M. Inbavalli, Professor & Head , Department of Master of Applications(MCA),Er.Perumal Manimekalai College of Engineering,Hosur,Tamil Nadu.

M.Muniraj, Second Year MCA, Er.Perumal Manimekalai College of Engineering,Hosur,Tamil Nadu.

L.Manikandan, Second Year MCA, Er.Perumal Manimekalai College of Engineering,Hosur,Tamil Nadu.

2. VECHILE TRACKING

A vehicle locating system was described which relied on the use of the existing nationwide cellular radio net work used in mobile telecommunications (cellular phone system). Cellular telephone networks rely on an array of cell sites, each cell site covering a predetermined area and having a wireless signal detecting and generating unit at a central location in the area. These cell sites receive and transmit signals to and from cellular phones within their area on their own set of frequencies, and are linked via conventional land lines to a mobile telecommunication switching office (MTSO) for transmission to other cell sites,

receivers, or conventional phones via a telephone company central office [2].

Fig 2.1 GPS SYSTEM INSTALLING [2]

3. LITERATURE REVIEW

Global Positioning System is mostly used for tracking system. In this survey we have studied various tracking system. Benjamin Coifman, David Beymer, et al. proposed a real time computer vision system for vehicle tracking and traffic surveillance on the basis of video image processing system. The vehicle trajectory is used as input to sophisticated, automated surveillance applications. The tracking system can give exact position of vehicle and vehicle movements in weaving sections [1]. Akande Noah Oluwatobi represent automatic vehicle location is advanced method to track and monitor any vehicle equipped with software unit that receives and transfers signal through GPS satellite. Automatic vehicle location system used web based, mobile communication and SMS based platform for communication. This system enables to collect and analyze the information about location of vehicle in real time [2]. Bus arrival time prediction algorithm combines global positioning system with the real time estimates of inter station speed. This system is capable of tracking a large number of buses simultaneously and detects the routes and directions automatically. Artificial neural network model is used for predicting bus arrival times and demonstrate its superior performance as compared with other method [6].

4. EARTHQUAKE DETECTION

The data used in the inversion include vector displacements measured at GPS stations, line-of-sight (LOS) displacements derived from synthetic aperture radar (SAR) data from three tracks of the ALOS-2 satellite. The GPS data are from the network deployed by the Caltech Tectonics Observatory and processed by Advanced Rapid Imaging and Analysis Center for Natural Hazards at Jet Propulsion Laboratory. Both horizontal and vertical components of the GPS displacements were used in the invention. Kinematic inversions assumed that fault slip can be approximated by a superposition of rectangular dislocations in homogeneous elastic half-space. Faulty geometry was constrained by the assumption that the rupture plane intersects the surface along the MFT between 84.34°E and 86.19°E. The 185 km long and 160 km wide fault was divided which sizes increase with depth to ensure a relatively uniform model resolution.

In the second step, missing node coordinates were imputed, employing a mass-spring system (Fox & Mahanty, 1970) that takes into account all the available information, such as the network topology, the coordinates of the nodes connected to the node with missing

coordinates and the attributes of those links, particularly the length.

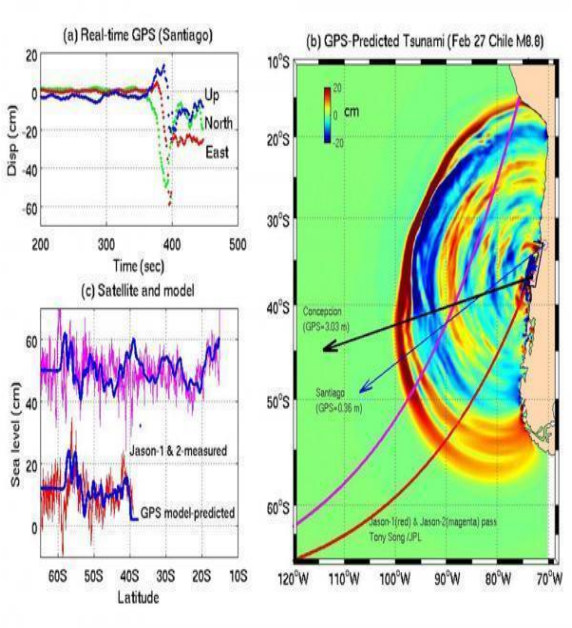

Fig 4.1 Location Strategy [5]

5. EARTHQUAKE ANALYSIS

Prior to use to set generation and subsequent analysis in modeling, both road network and data on the 46,774 actual trips had to be processed further. Issues encountered during the data conversion and cleaning phase related to the network. The three-step process was necessary to convert and clean the data. The first step was the basic network conversion, it concerned with converted bi-directional links into one link per admissible direction in the original network. In the third step, additional cleaning procedures which are part of the network conversion and cleaning tools of the transport simulation tool MATSim were used to make the final network meet the requirements of the choice set generation, these approaches establishes strong network connectivity. We also removed pedestrian only roads. Speed information per link were required but not present in the data, and speed assumptions per road type were therefore made as summarized, using official values provided by the UK Department for Transport.

We found that a model with a dip angle of 7fits the LOS displacements from of all three ALOS-2 tracks as well as GPS data very well, with a low misfit of $\chi 2 = 1.1561$. The preferred co seismic slip model is shown in. The model is characterized by dominantly thrust slip, with minor contribution of dextral component, concentrated in a relatively narrow (compared to the along-strike rupture dimension) zone between ⊚50 and ⊚100 km along the down dip direction. The maximum slip is ⊚5.8mat a depth of ⊚8 km with respect to sea level. The total moment is 6.08×1020 Nm, corresponding to a moment magnitude of $Mw = 7.79$, in excellent agreement with the seismic moment. The slip on the central part of the rupture seems to have extended farther down dip, compared to both the eastern and western tips of the rupture that appear to taper to a width of 20–30 kmMost of the aftershocks occurred along the eastern half of the fault, around the patches of relatively large co seismic slip.

6. NATURE OF DEMENSIA

The origin and nature of dementia is perceived in different ways. It is sometimes perceived as a natural part of ageing (Berchtold and Cotman, 1998; Corner and Bond, 2004; Karenberg and Förstl, 2006), this perception is evident to a greater degree in some cultural groups (Ayalon and Areán, 2004; Braun and Browne, 1998; La Fontaine et al., 2007, Roberts et al., 2003; Werner, 2004). It is also commonly perceived as a mental disorder (Alzheimer's Society, 2008; American Psychiatric Association, 2012; Rimmer et al., 2005). Other perceptions include dementia as like a second childhood (Cayton, 2001; Ngatcha-Ribert, 2004), a contagious condition (Ayalon and Areán, 2004; Purandare

et al., 2007) and as linked to fate, evil spirits, the evil eye, lack of faith in or punishment from God (Blay and Peluso, 2010; Downs et al., 2006; Elliot et al., 1996; Hussain, 2001; MacKenzie, 2006; Uwakwe, 2000; Yeo et al., 2007).

Increasing attention has also been given to perceptions of dementia as a stigma: by the general public (Blay and Peluso, 2010), carers (Blum, 1991; Devlin, MacAskill and Stead, 2007; Liu, 2008; Nolan et al., 2006; Werner, Goldstein and Buchbinder, 2010; Werner and Heinik, 2008), older people (Corner and Bond, 2004), people with dementia (Burgener and Berger, 2008; Devlin, MacAskill and Stead, 2007; Nolan et al., 2006) and health and social care professionals (Nolan et al., 2006). Several studies suggest that GPs also consider dementia a stigma (Cahill et al., 2008; Husband, 2000; Iliffe, Manthorpe and Eden, 2003; Kaduszkiewicz, Bachmann, and van der Bussche, 2008; Moore and Cahill, 2013; Pentzek, Fuchs and Abholz, 2005; Van Hout et al., 2000; Vernooij-Dassen et al., 2005).

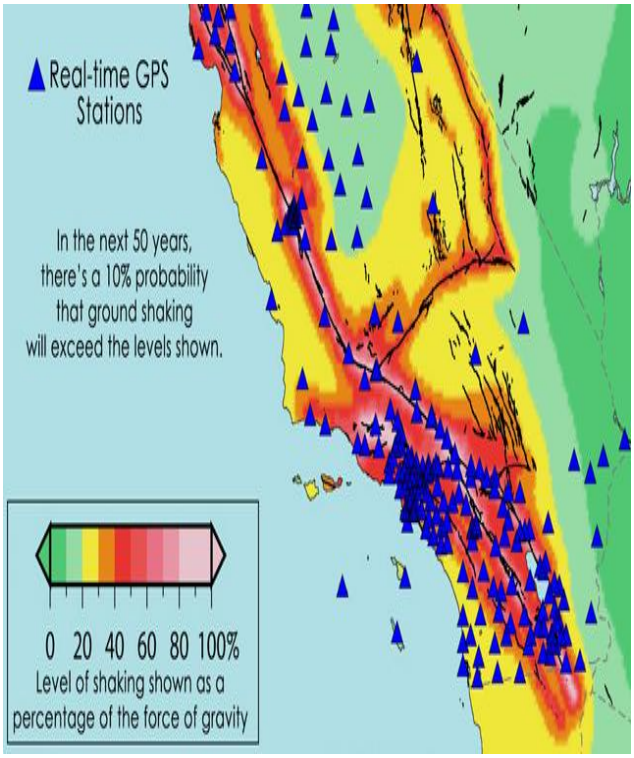

Fig 6.1 GPS Station [6]

7. CONCLUSION

An vehicle tracking and loc king systems used to track the theft vehicle by using GPS and GSM technology. This system puts into the sleeping mode vehicle handled by the owner or authorized persons; otherwise goes to active mode.

We used the surface displacement data provided by GPS and In SAR to model the co seismic slip distribution and fault the geometry of the 2015 *Mw* 7.8 Gorkha earthquake in Nepal. Aftershocks of the 2015 event were mostly surrounding the areas of high co seismic slip. The best fitting model suggests a shallow dip angle of 7° for the MHT. The 2015 Gorkha earthquake ruptured the deep part of the seismogenic zone, with little in the shallow part. This is in contrast to the 1934 Bihar-Nepal event, whose rupture had likely reached the surface, implying increased seismic hazard on the fault section up dip of the 2015 event.

8.REFERENCES

1. Sumit S.Dukare,Dattatray A.Patil, Kantilal P.Rane Department of E &TC GF's Godavari College of Engg. Jalgoan(India)2015.**"Vechile Tracking Monitoring and Alerting Systemk: A Review.**
2. Geethanjali.K, Pusparani.M.K VTU Belgaum, M.Tech in VLSI Design and embedded system,MITE, Moodabidri(2015) **"Real Time Vehicle Monitoring and Tracking System for School Bus via Beagle Bone.**
3. R. Surender Reddy, M. Hymavathi, E. Shilpa. Assistant Professor, Department of ECE, Lords Institute of Engineering and Technology,

Telangana, India. **Real Time Vehicle Monitoring and Tracking System based on Embedded Linux Board during 2016**

4. Hess, S, Quddus, M, Rieser-Schuessler, N and Daly, A(2015**) "Developing advanced route choice models for heavy goods vechiles using GPS data. Transportation Research Part E: Logistics and Transportation Review, 77.29-44.ISSN 1366-5545".**
5. Kang Wang and Yuri Failko Institute of oceanography, university of California,USA.**"Slip Model of the 2015 Mw 7.8 Gorkha (Nepal) Earthquake From Inversion of ALOS-2."2015**
6. Galetzka, J., et al. (2015), "**Slip pulse and resonance of Kathmandu basin during the 2015 *Mw* 7.8 Gorkha earthquake"**, Nepal imaged with geodesy, *Science*, *349*(6252), 1091–1095, doi:10.1126/science.aac6383.
7. Shinhye joo, Choel Oh, Eunbi jeong, Gunwoo Lee (2015) Department of Transportation and Logistics Engineering Hanyang University, Ansan, Republic of Korea.
8. Gove D, Downs M, Vernooij-Dassen M and Small N (2016) **"Stigma and GPs' perceptions of dementia. Aging & Mental Health. 20(4): 391-400".**
9. Janet E. Loebach, Department of Geography, Western University(2014), 1151 Richmond St., London, Ontario, Canada N6A 5C2.