Crowd dynamics in the spotlight after Duisburg disaster

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(PhysOrg.com) -- The Love Parade in Duisburg in western Germany on 24th July was supposed to be a night of music and celebration for the estimated 1.4 million revelers, but it became a catastrophe, with 21 dead and over 300 injured in a stampede as they tried to escape from a crowd disturbance in the only exit/entrance tunnel for the site.

A physicist at Cologne University, Andreas Schadschneider, who specializes in modeling crowd behavior, said after the Duisburg incident that in the majority of crowd disasters panic plays almost no part in the events, and in fact most people act co-operatively and altruistically even under extreme conditions.

Schadschneider's research focuses on pedestrian dynamics at sports stadiums, and he is developing computer software called the Hermes

Evacuation Assistant to provide information on the distribution of people, availability of evacuation routes, and the likely route people might use to try to escape during an emergency. His work on Hermes was featured in a Physics World article earlier this month.

While it is not yet certain exactly what happened at Duisburg, Schadschneider said from the footage it seemed the loudness of the music could have been a factor, since it would have been hard for people to hear police commands. He suggested one measure that could be adopted in future large crowd events would be to install more cameras to allow disturbances to be detected earlier, but said it could still be difficult for stewards or police to intercept and change the flow of people.

Schadschneider said he hoped the disaster would result in more consultation of crowd dynamics researchers from organizers responsible for crowd management, and that decisions about large crowd events would be overseen by a central governing body rather than being left in the hands of local authorities. The population of Duisburg is under 500,000 people - around one third the estimated number of festival goers on July 24th. While there may have been local planning failures, Schadschneider also said Germany was among the leading countries in the world for crowd dynamics research and applications.

More information: Hermes project - www.fz-juelich.de/jsc/appliedm … /ped/projects/hermes