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2D - 3D high resolution seismic survey on the Sea of Marmara - Western High

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In the Sea of Marmara the main strand of the NAF is made up of the Ganos (15km long), Central Marmara (150 km), and North Boundary (45 km) fault segment (Okay et al., 2000). The Central Marmara Fault crosses over The Western High which is located between Tekirdag and Central Marmara Basins. The Western High and Cinarcik Basin is one of the major regions of geological interest which is the area close to the NAF where evidence of gas hydrates and gas escapes have been observed during previous scientific cruises. To understand movement of the NAF and origin of the gas , collecting data was focused on these areas by the latter cruises. It started with TAMAM (Turkish-American Marmara Multichannel) cruise in July 2008 by R/V Koca Piri Reis which belongs to Dokuz Eylul University , and after that it continued with MARMESONET (Marmara Demonstration Mission Program supported by European Seafloor Observatory Network) in December 2009 by R/V Le Suroit which belongs to IFREMER. This cruise consisted of two leg; leg-1 was about collecting multibeam and AUV data, Leg-2 was about collecting High Resolution 3D Seismic data. The last cruise PirMarmara was carried out in June 2010 by R/V Koca Piri Reis , its aim was that collecting 2D High Resolution Seismic Data .These projects are grouped in ESONET MARMARA-DM Project.

3D seismic data provide detailed information about fault distribution and subsurface structures. Computer-based interpretation and display of 3D seismic data allow for more thorough analysis than 2D seismic data.
The objectives of this survey are; find gas strata and gas hydrate formation location in the western high, geological description of this area, understand tectonical movement related to dextral strike slip North Anatolian fault, focus on the mud volcano in which close to NAF, find gas hydrate and origin of the existing gas , and location of the gas escaping, investigate the creation of the Marmara Sea concerning with Western High. Integrate good velocity information which is obtained from 2D seismic processing with to 3D seismic data for effective interpretation.

In conclusion, there were some cruises related to collecting kind of the marine geology and geophysics data in The Western High. The investigations have been focused on gas hydrate, gas escape, location of the gas strata and tectonic movement. The Data has been processed and started to interpretation.

Keywords: Sea of Marmara, Western High, Gas field, Gas Hyrate, 2D-3D Seismic