The German Athletics Federation (DLV) in cooperation with several major sport entities in Germany carried out a Biomechanical Research Project during the 12th IAAF World Championships in Athletics in Berlin 2009.

The co-operation partners of the DLV for the project were:

- The Institute for Applied Training Sciences (IAT) Leipzig;
- The Olympic Training Centre (OSP) Berlin;
- The Olympic Training Centre (OSP) Hessen;
- The Olympic Training Centre (OSP) Rheinland;
- Martin Luther University Wittenberg-Halle.

This project continued a tradition of research projects at major athletics events over the past 35 years with the overall aim of providing coaches and researchers with the data and findings on the technique of elite performers and thereby assisting with the process of performance development. Previous studies include:

- European Athletics Championships 1978 in Prague;
- European Athletics Championships 1982 in Athens;
- IAAF World Championships in Athletics 1983 in Helsinki;
- IAAF World Junior Championships 1986 in Athens;
- IAAF World Championships in Athletics 1987 in Rome;
- Olympic Games 1988 in Seoul;
- IAAF World Championships in Athletics 1997 in Athens;
- IAAF World Championships in Athletics 1999 in Seville;
- IAAF World Championships in Athletics 2005 in Helsinki.

The specific purposes of this study were:

- to update the database of biomechanical parameters of elite athletes;
- to support coaches and athletes with quantitative information on individual techniques;
- to improve the general knowledge of the limiting factors of athletic performance;
- to generate data on gender specific techniques.

The project focussed on the finals (men and women) of the following events:

- 100m, 200m and 400m;
- distance events;
- race walking events;
- 100m and 110m hurdles;
- long jump, triple jump and pole vault;
- shot put, discus throw, javelin throw and hammer throw;
- combined events.
The biomechanical data were gathered using High Speed Video Techniques, 3-dimensional motion analysis, speed and time measurements. Further details of the methods used are contained within the individual event reports.

In this issue of NSA, the four reports on the throwing events are published together. Reports on other events will be published in future editions. For readers interested in the descriptive analysis of the events it is recommended they check the IAAF Website www.iaaf.org (Development – Research).

Please send all correspondence to:

Helmar Hommel
helmarhommel@aol.com

The Project Team in Berlin consisted of 18 members from Germany:

- Project Co-ordinator
  Helmar Hommel (DLV)

- Project Team
  Marko Badura (IAT Leipzig)
  Jörg Böttcher (OSP Berlin)
  Dr Ralf Buckwitz (OSP Berlin)
  Dr Olaf Ernst (IAT Leipzig)
  Dr Dieter Gohlitz (IAT Leipzig)
  Rolf Graubner (Martin Luther University Wittenberg-Halle)
  Regie Isele (OSP Hessen)
  Mirko Landmann (Martin Luther University Wittenberg-Halle)
  Dr Frank Lehmann (IAT Leipzig)
  Dr Luis Mendoza (OSP Hessen)
  Ralf Müller (OSP Rheinland)
  Eberhard Nixdorf (OSP Hessen)
  Dr Bettina Perl (IAT Leipzig)
  Wilko Schaa (IAT Leipzig)
  Falk Schade (OSP Rheinland)
  Axel Schleichhardt (IAT Leipzig)
  Anja Starke (Martin Luther University Wittenberg-Halle)