

**1. Main research topics** (repeat for every major topic)

Title	Enhancement of plasma vertical stability of elongated plasmas with applications to ITER
Short description (max. 200 words)	Develop a new control algorithm for plasma vertical stabilization, based on modern control theory of minimum time response of a second order system to enhance plasma stability of very elongated plasmas with applications to ITER.
Specific targets	APCS Improvement and Exploitation
Milestones	<ul style="list-style-type: none"> <li>-Integrate the simulation of the fast coils and plasma response with the control algorithm under development, running a full simulation of the closed loop cycle.</li> <li>-Implement the control algorithm into the Advanced Plasma Control System.</li> <li>-Test the control algorithm and implementation in the “real-world” by running and analyzing the results at the TCV Tokamak.</li> </ul>
Timeline	During 2012

**3. Expected output**

	Objectives	Performance indicators
Papers, contributions to conferences, patents, reports, etc	Contribution to conference with publication of one paper in an international journal.	Acceptance of one paper in an international refereed journal or conference.