

The logo for the GPU Technology Conference is located in the top-left corner. It consists of a green rectangular box with a small triangle pointing downwards on its left side. Inside the box, the text "GPU" is written in a large, bold, white sans-serif font, and "TECHNOLOGY CONFERENCE" is written in a smaller, white sans-serif font to its right.

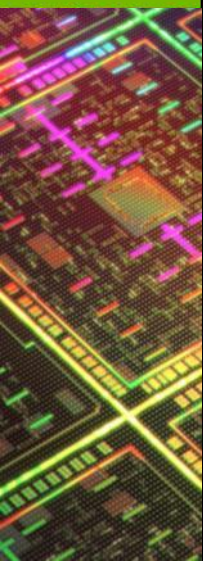
GPU TECHNOLOGY
CONFERENCE

The background of the slide is a detailed, high-resolution image of a GPU die. The die is a square chip with a complex grid of circuitry. The lines of the circuitry are highlighted with vibrant, multi-colored lights in shades of blue, green, yellow, orange, red, and purple, creating a glowing effect against the dark background of the chip.

GPUs in Energy Exploration: Software Development & Deployment

Panel: GPUs in Energy Exploration Software Development & Deployment

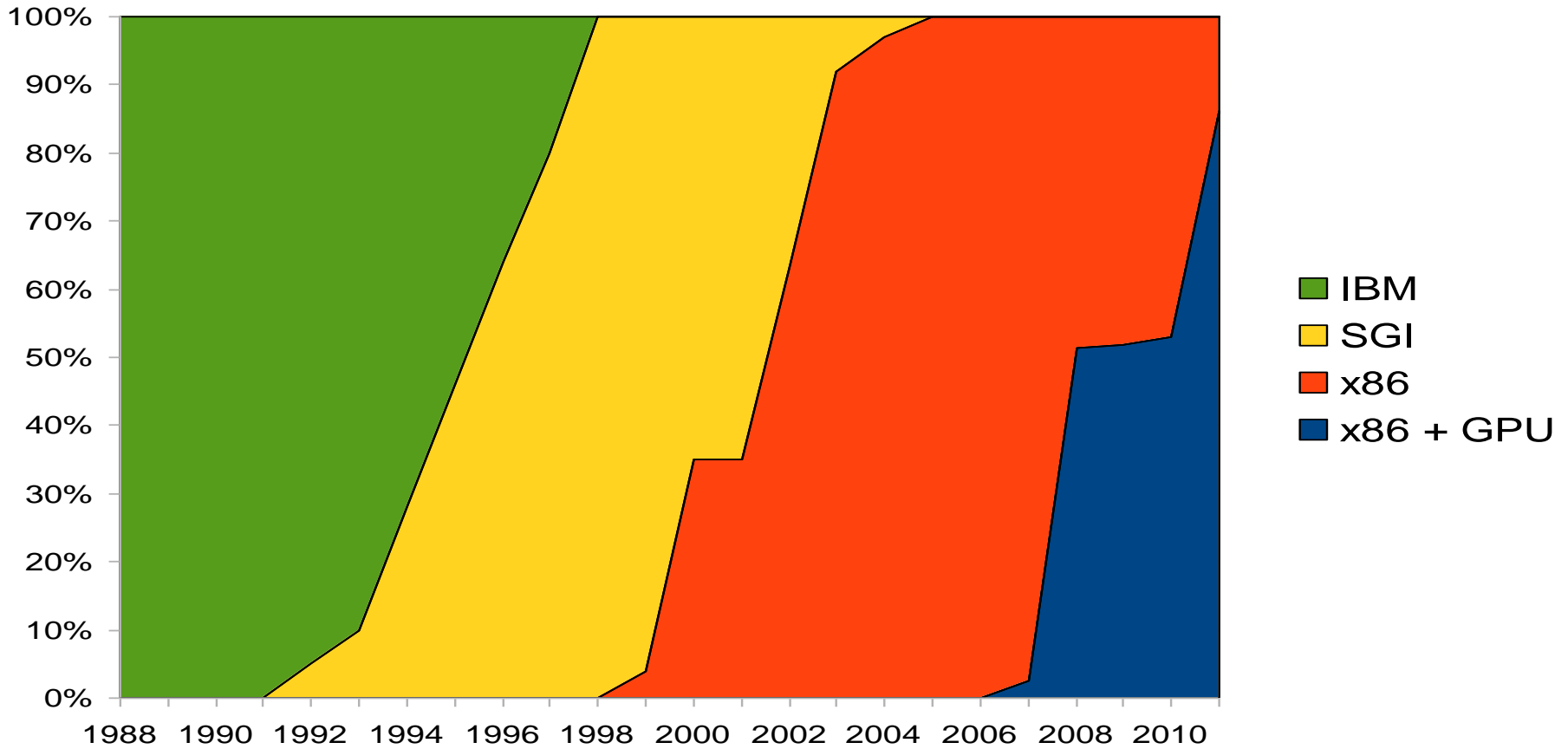
Dave Nichols	Alex Loddoch	Paulo Souza	Mauricio Araya	Bob Clapp	Paulius Micikevicius
Schlumberger	Chevron	Petrobras	Repsol	Stanford	NVIDIA





PETROBRAS

Petrobras Processing Power Distribution





- ILP – Instruction level parallelism;
- Overlap kernel execution with memory copies and communication;
- Textures to minimize data size;
- Recompute instead of load from memory / filesystem;
- CPU cooperation;
- Multi GPU – MPI layer: IB or P2P under;



- **Five GPU clusters:** Three for production and two for research
- Data Regularization – RMIL (Regularization by local isochrones migration)
- Kirchhoff Time Migration and Velocity Analysis
- Curved Ray / Anisotropy
- Kirchhoff Depth Migration
- One Way Wave Equation Migration
- Reverse Time Migration