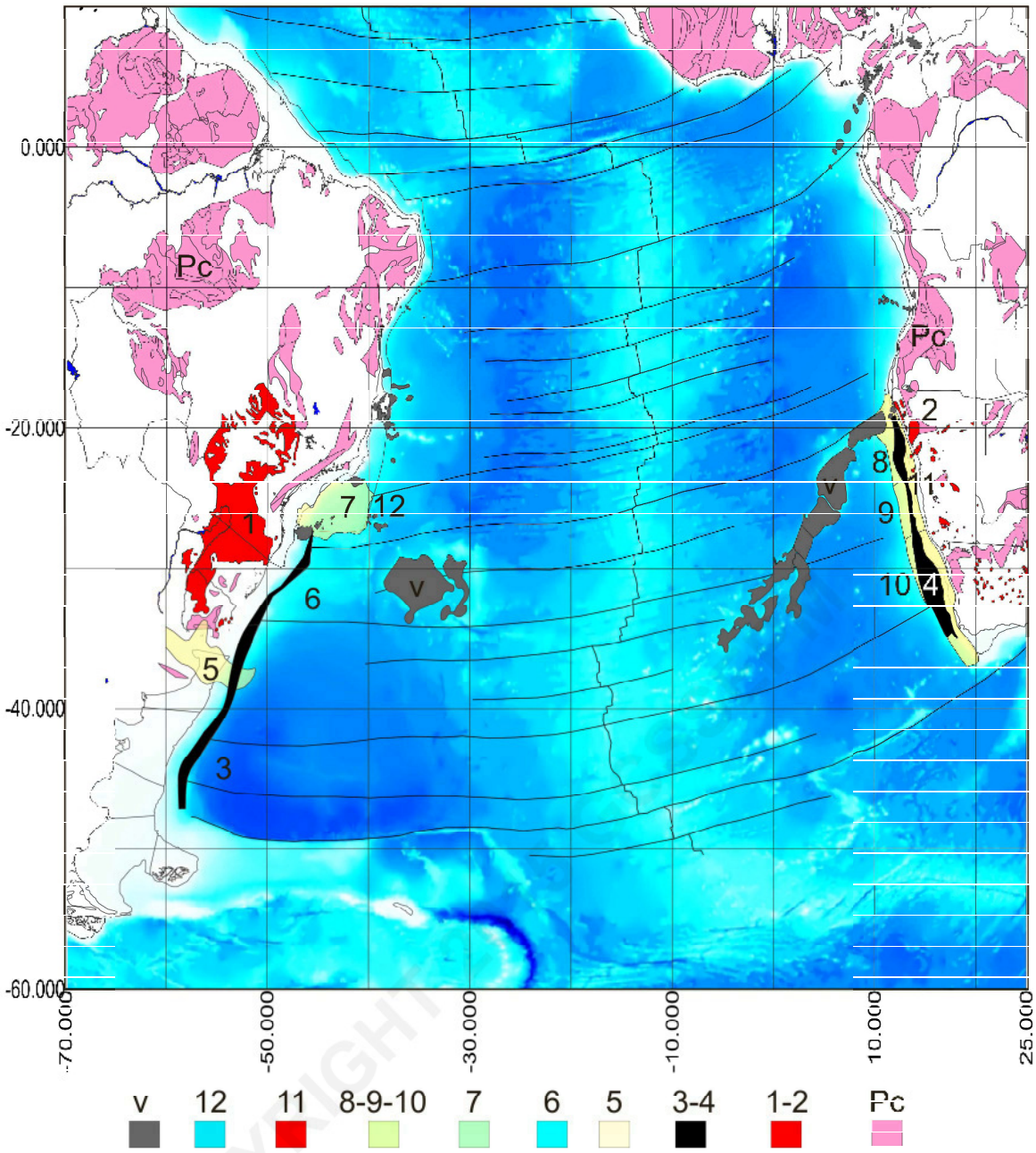

Figure 1. Regional location map of the southern South Atlantic sedimentary basins and main structural elements of eastern South America and West Africa. 1: Paraná Basin Continental Flood Basalts (CFB); 2: Etendeka CFB; 3: South Atlantic SDR province (western branch); 4: South Atlantic SDR province (eastern branch); 5: Salado and Punta del Este basins; 6: Pelotas Basin; 7: Santos Basin; 8: Walvis Basin ; 9: Lüderitz Basin; 10: Orange Basin; 11: Messum, Brandberg and Erongo Complexes; 12: São Paulo Plateau; v: volcanic basement; Pc: Precambrian basement.

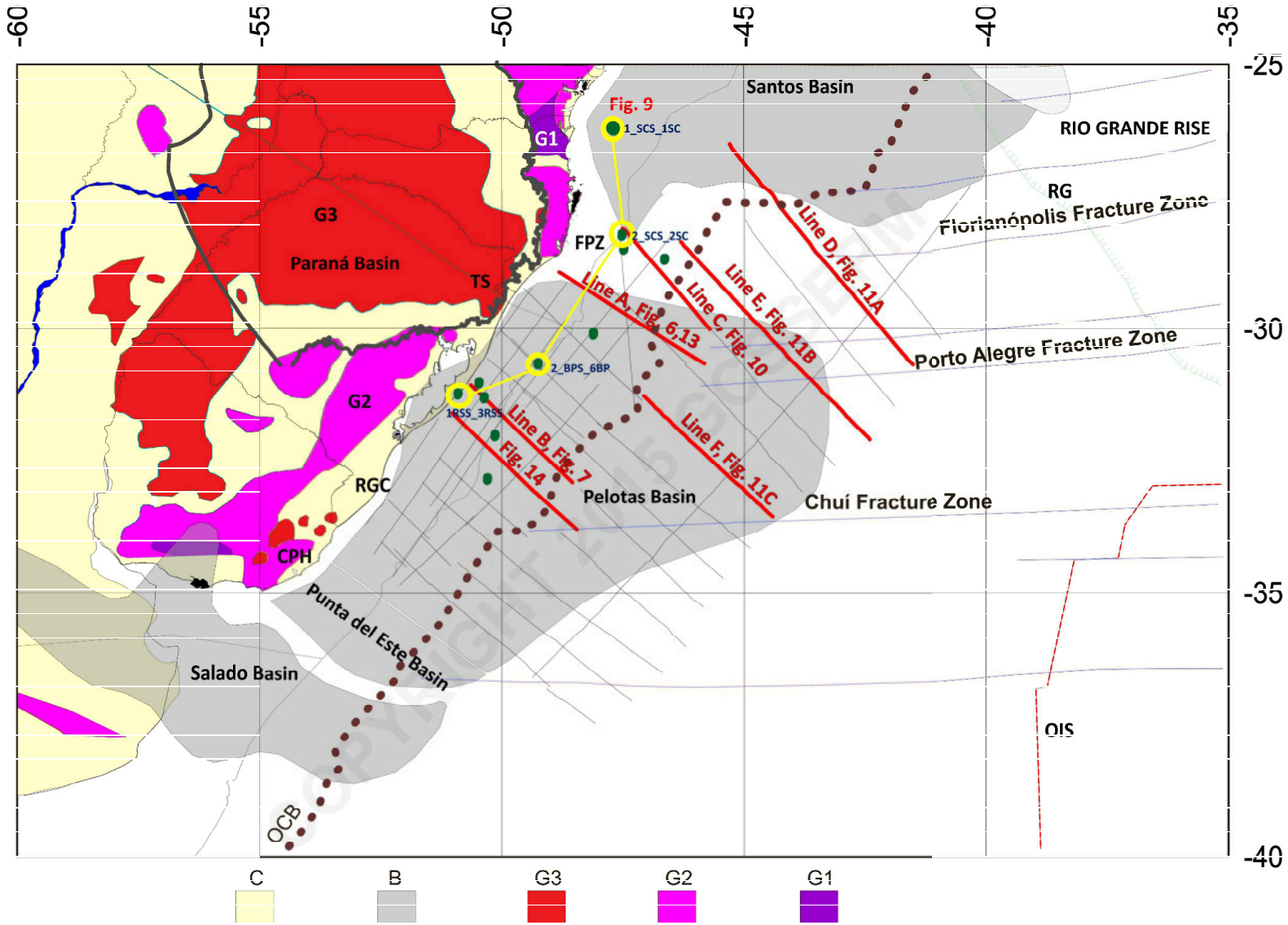

Figure 2. Geological and database distribution map of the Pelotas Basin. G1: Archean terrains; G2: Proterozoic terrains; G3: Paraná Basin CFB; B: Meso-cenozoic basins; C: Phanerozoic cover; OCB: oceanic-continental crust boundary; RG: Rio Grande-Walvis hot spot track; OIS: ocean basement isochrones at 83.5 Ma.; Black lines: 2D seismic lines used in the project; red lines: seismic examples; yellow line: well cross section; dark green dots: exploration wells drilled to date; CPH: Cabo Polonio High; RGC: Rio Grande Cone; TS: Torres Syncline; FPZ: Florianópolis Platform Zone.

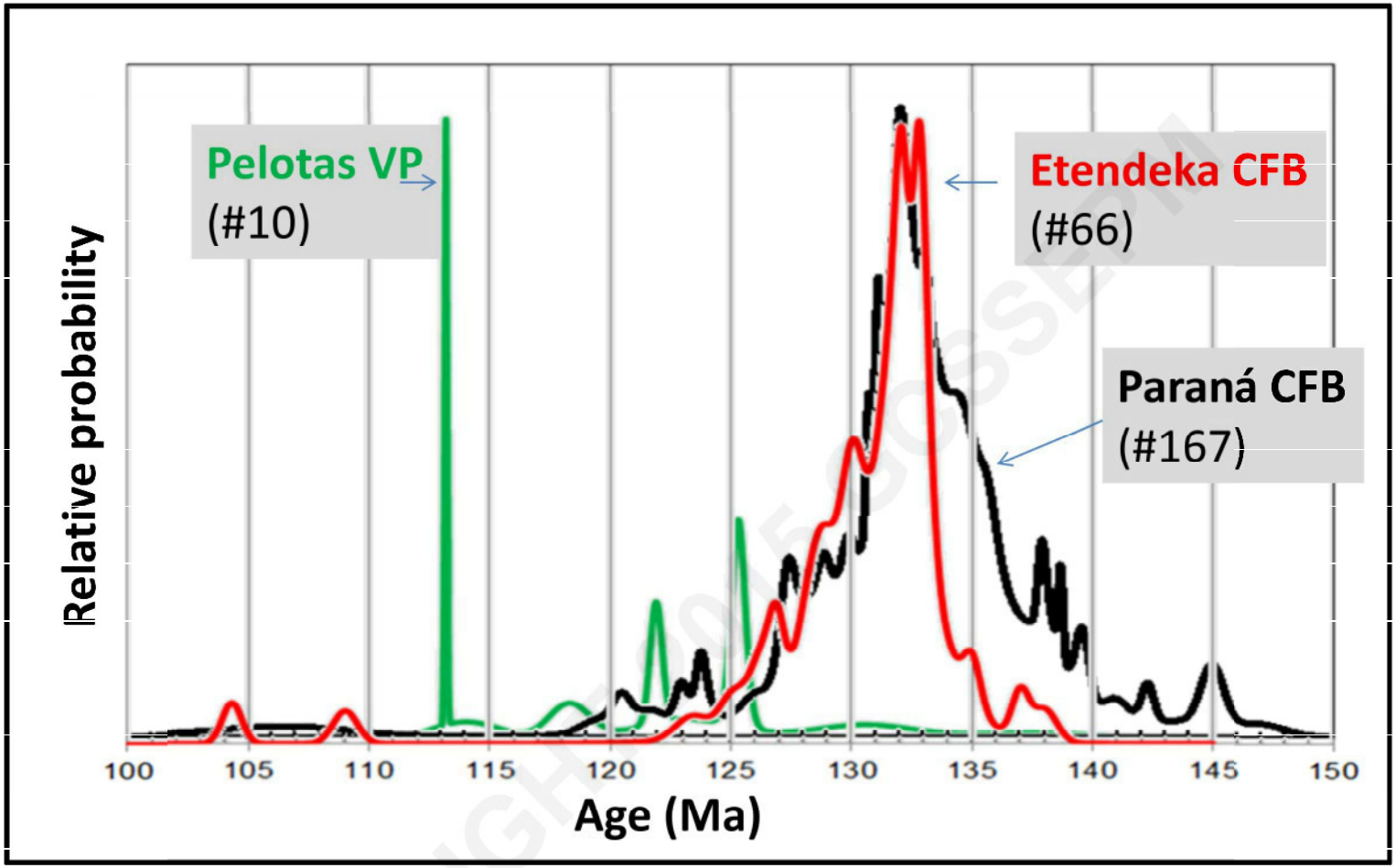

Figure 3. Probability density plot of compiled ages from the Paraná-Etendeka CFB provinces and from the Pelotas volcanic province. Radiometric ages after: Amaral *et al.*, 1966; Basu *et al.*, 1993; Comin-Chiaramonti, 2007; Deckart *et al.*, 1998; Ernesto *et al.*, 1999; Fodor and Asmus, 1983; Gibson *et al.*, 2006; Guedes *et al.*,2005; Kirstein *et al.*, 2001; Lobo, 2007; Lustrino *et al.*, 2005; Pinto *et al.*, 2011; Misusaki and Saracchine, 1990; Misuzaki and Moriak, 1992; Pirelli, 1999; Raposo *et al.*, 1998; Renne *et al.*, 1992, 1996a,b; Stewart *et al.*, 1996; Thiede and Vasconcelos, 2010; Tomazzoli *et al.*, 2005; Turner *et al.*, 1994; Valdecir de Assis *et al.*, 2011; and Viero *et al.*, 1992.

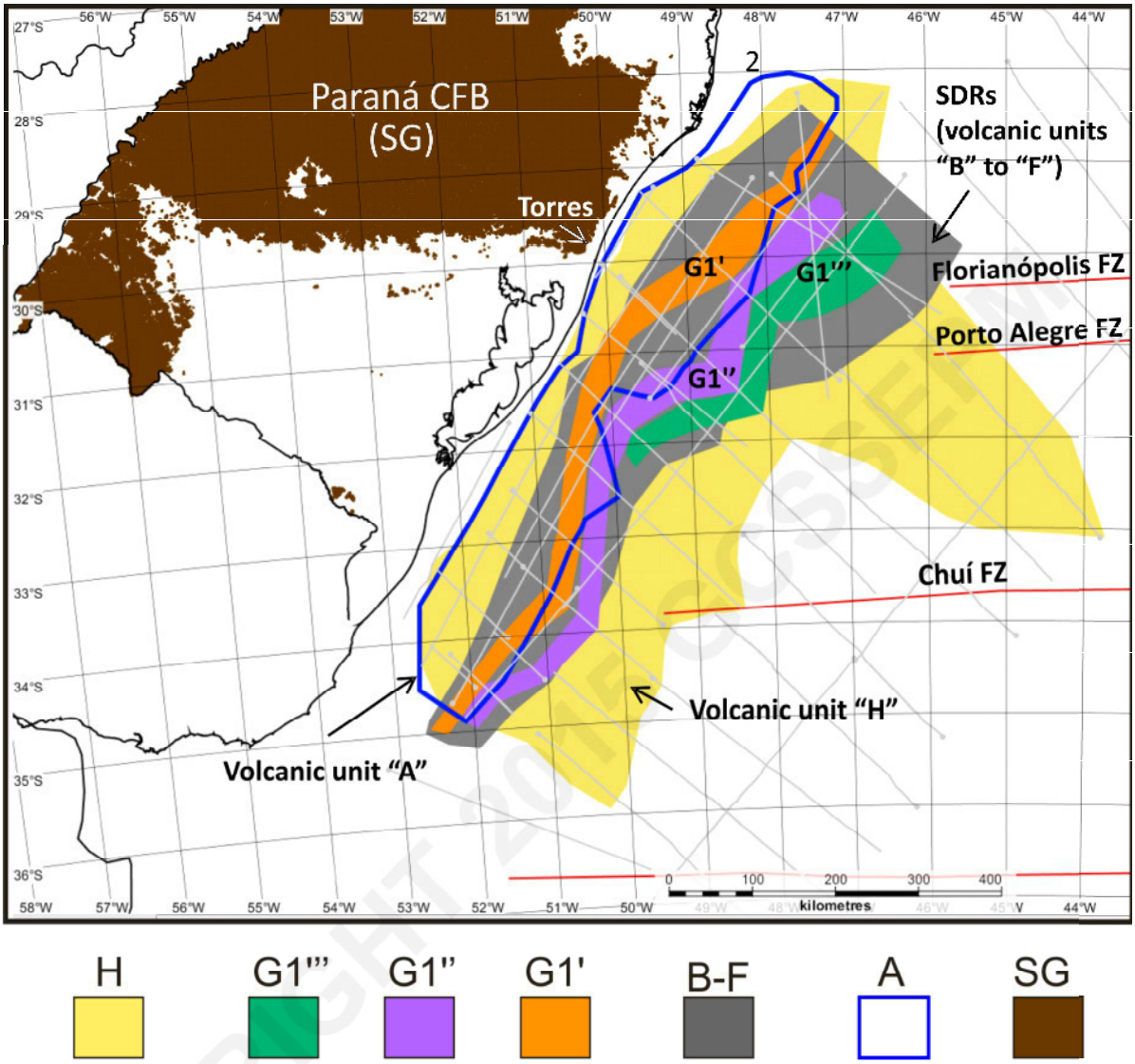

Figure 4. Regional distribution of magmatic units in the Pelotas basin. SG: Serra Geral volcanics (Paraná basin); A: Outline of volcanic unit 'A.' B-F: Volcanic units forming SDR wedges. H: Volcanic units covering the SDR wedges. G1'-G1''': map view extension of deep mounded features (igneous bodies "G1"). The mounded features are progressively younger from west (G1') to east (G1'''), and they have been interpreted as possible feeders system of the main SDRs sequences.