

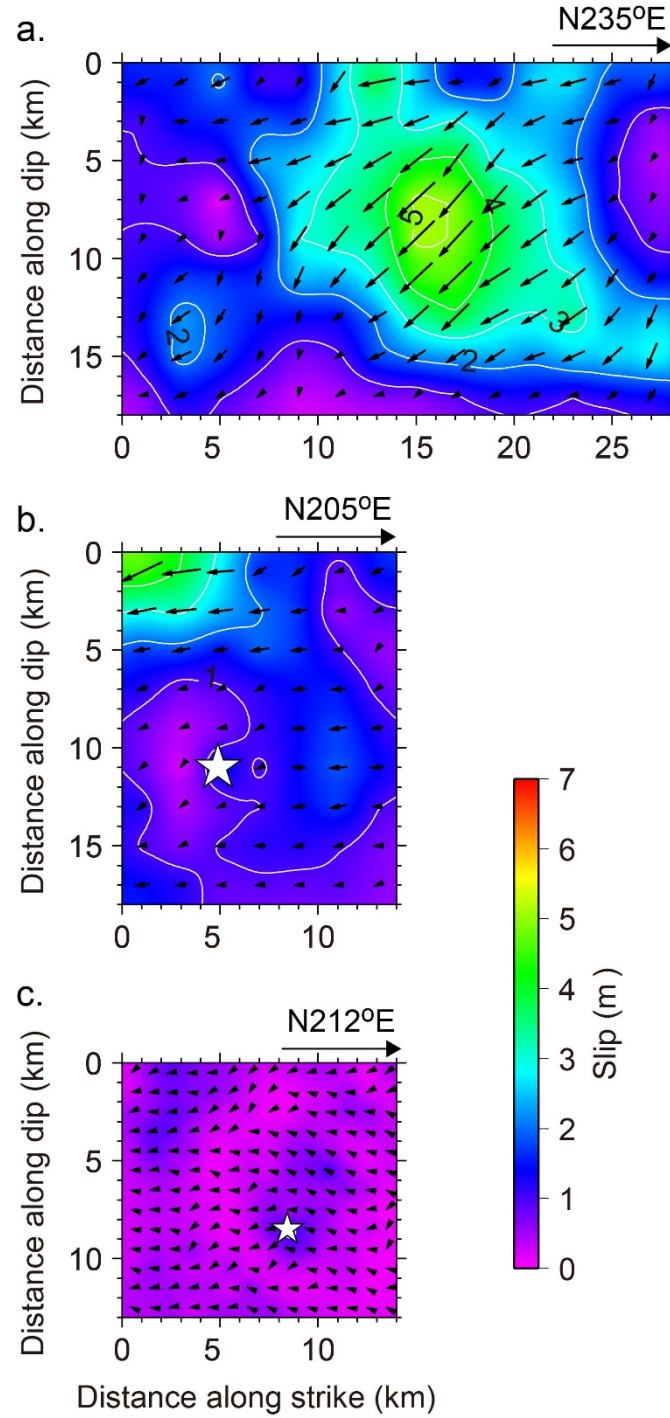


Figure S1 Coseismic slip distribution of the mainshock and the largest foreshock of the Kumamoto earthquake (Asano and Iwata, 2016). (a) The northern segment of the mainshock, (b) the southern segment of the mainshock, and (c) the largest foreshock's segment. The stars in (b) and (c) denote the hypocenters of the mainshock and the foreshock.

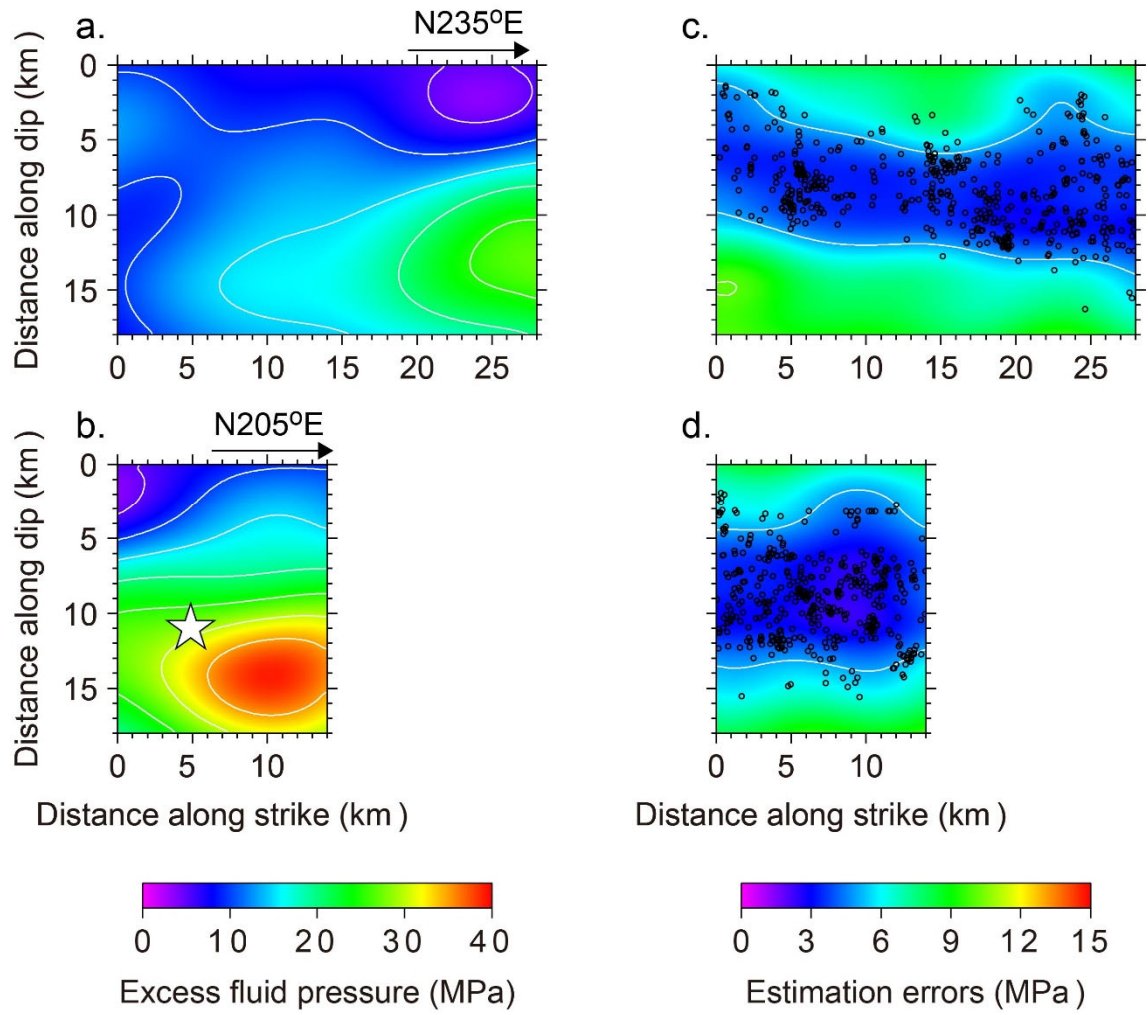


Figure S2 Excess pore fluid pressure on (a) the northern segment, and (b) the southern segment of the mainshock. (c) and (d) show the estimation errors (the 68 % confidence region). The black circles in (c) and (d) denote data used in the FMT analysis, whose hypocenters are within 10 km from the planes. The star is the hypocenter of the mainshock.

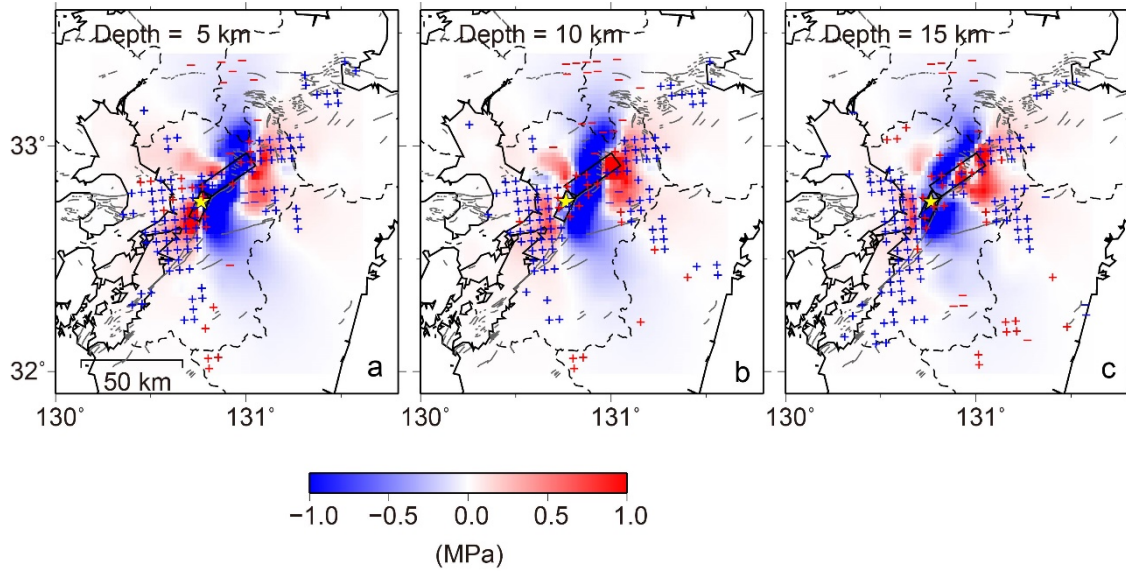


Figure S3 Distribution of seismicity rate changes at evaluation points on ΔCFS . Seismicity rate changes at depths of (a) 5 km, (b) 10 km, and (c) 15 km. The blue and red pluses denote evaluation points of Groups 1 and 2 where seismicity rates for the postseismic period are more than ten times larger than those for the preseismic period. The red and blue minuses denote evaluation points of Groups 3 and 4 where seismicity rates for the postseismic period are more than ten times smaller than those for the preseismic period. The color scales in the background show values of ΔCFS (which are truncated outside the region from -1.0 to 1.0). The stars and the grey lines are the same as in Figure 2. The black rectangles show the main rupture zone.

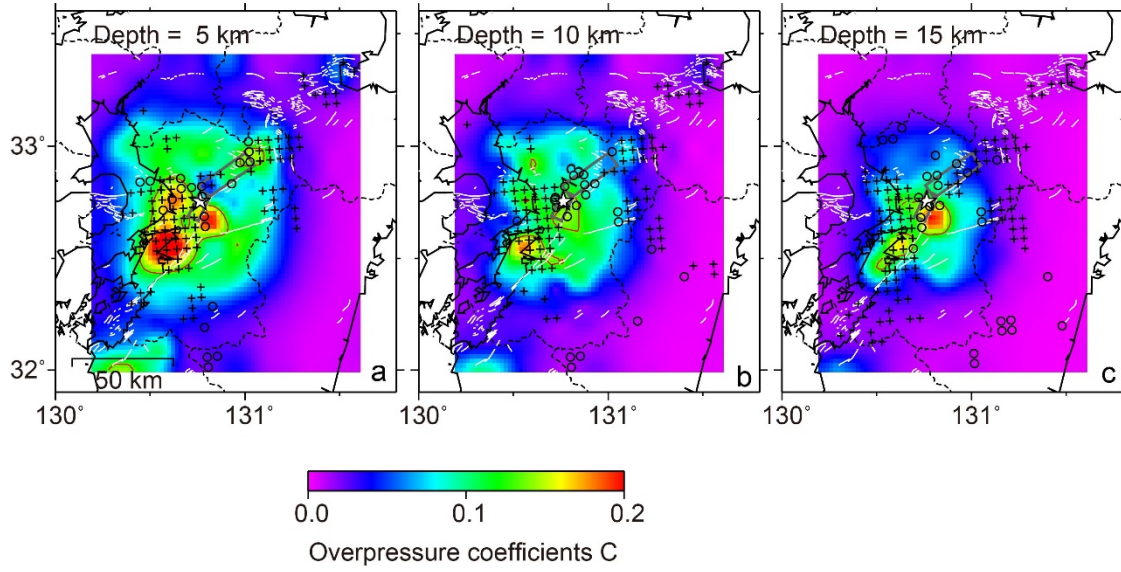


Figure S4 Distribution of seismicity rate increases on pore fluid pressure fields. Seismicity rate increases at depths of (a) 5 km, (b) 10 km, and (c) 15 km. The pluses and circles denote evaluation points of Groups 1 and 2 where seismicity rates for the postseismic period are more than ten times larger than those for the preseismic period. The stars, the red lines, the white lines, and the grey rectangles are the same as those in Figure 7.

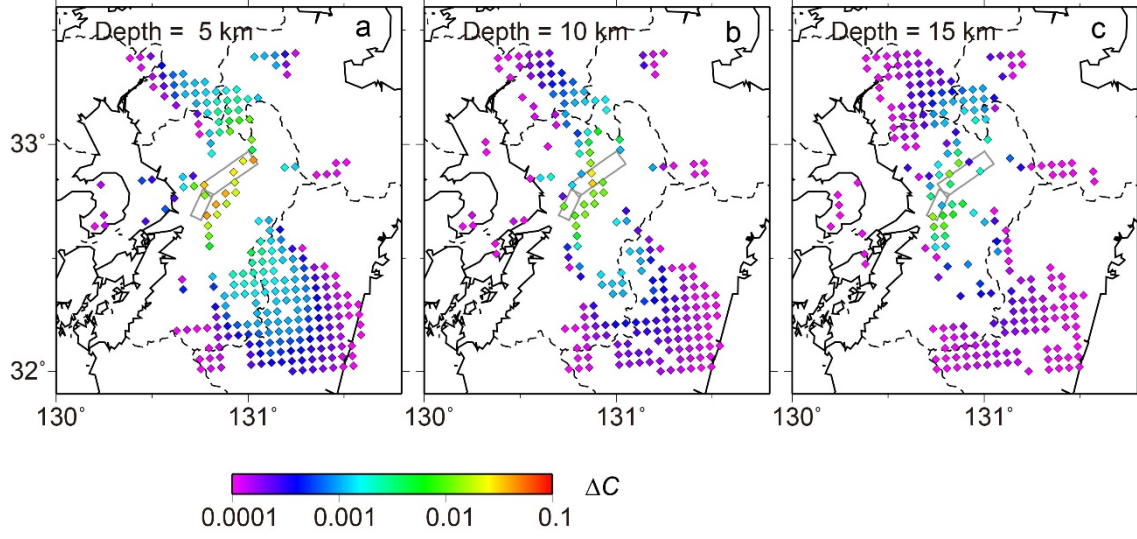


Figure S5 Distribution of necessity minimum of increases in pore fluid pressure, $\Delta P_f^{\min}$ (Eq. 6) at depths of (a) 5 km, (b) 10 km, and (c) 15 km. Values indicate overpressure coefficients C for $\Delta P_f^{\min}$.

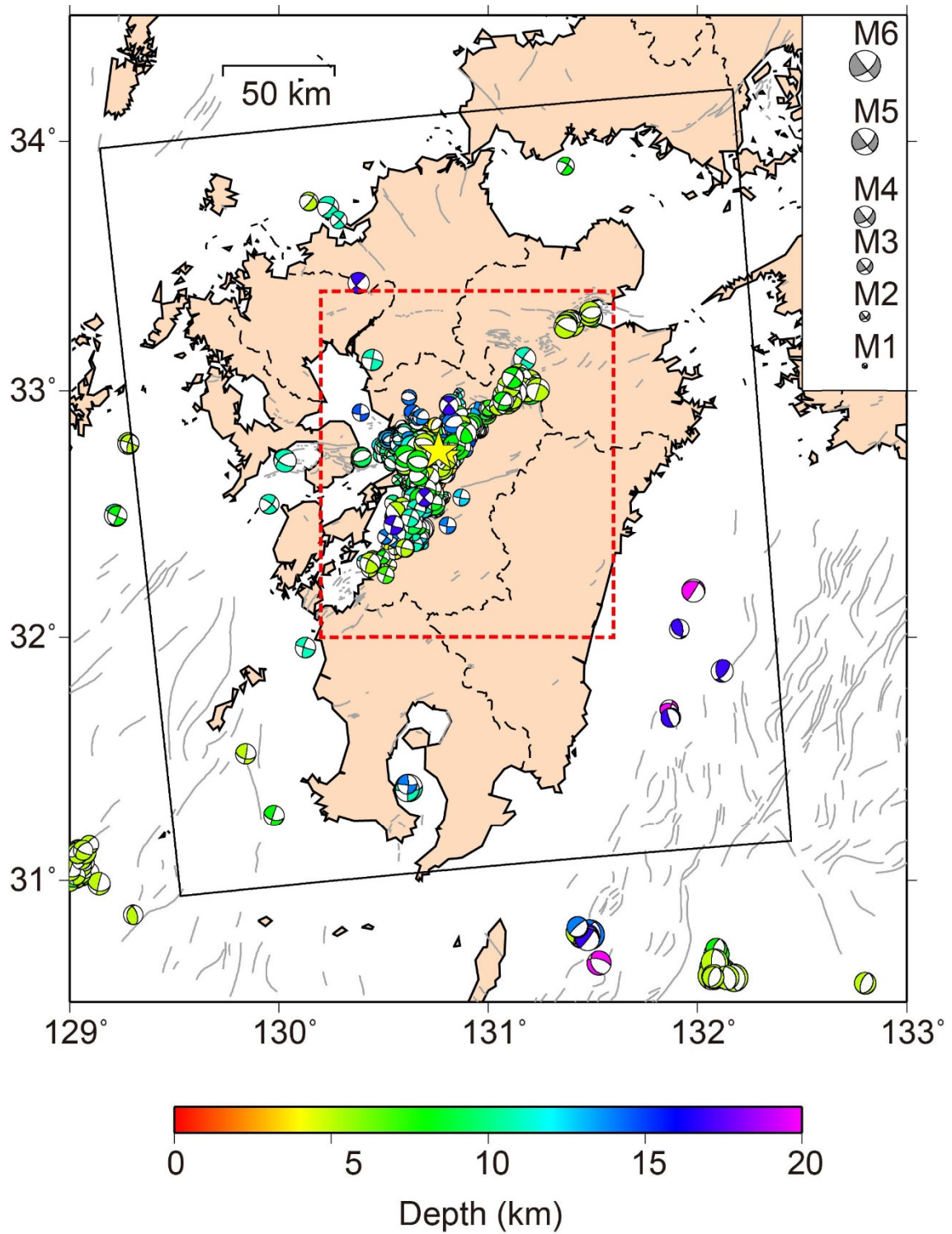


Figure S6 Earthquake focal mechanism data for the postseismic period. Representation of focal mechanism data, the star, the black and red dashed lines, and grey lines are the same as in Figure 3.

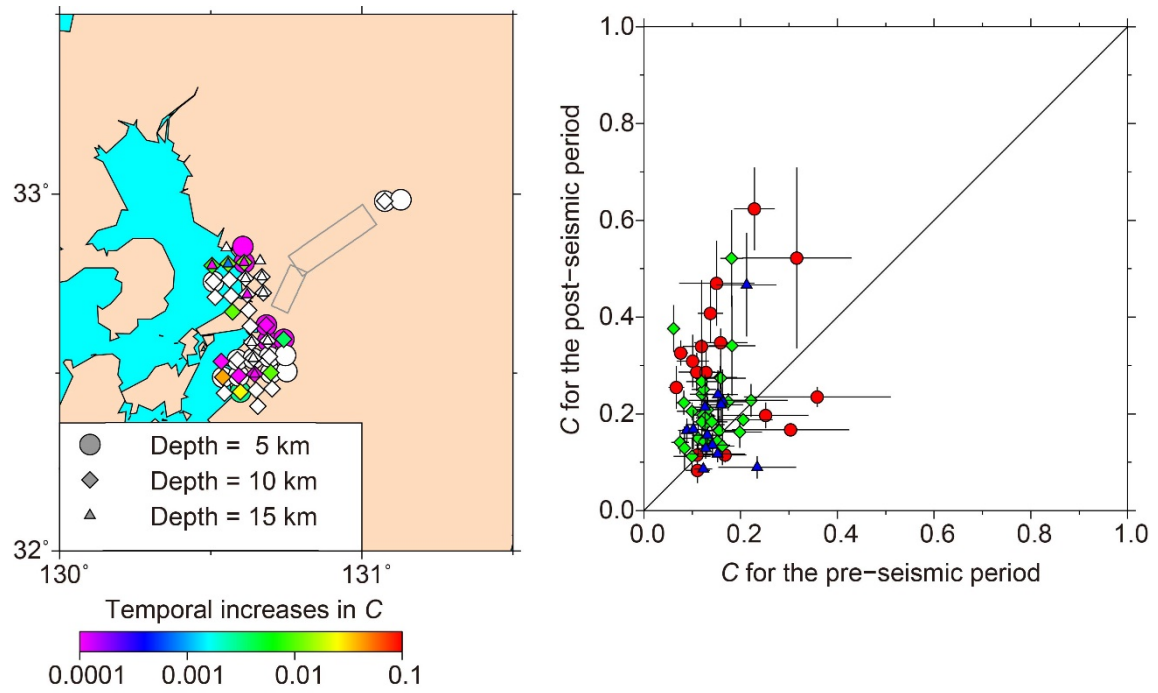


Figure S7 Temporal changes in pore fluid pressure that followed the Kumamoto earthquake (Group 1). (a) The 62 target regions. (b) Temporal changes in overpressure coefficients. The representation of these figures are the same as in Figure 11.