
Slabbing Borehole Images: A True 2D Visualization of Wellbore Geology

Anish Kumar¹, Josselin Kherroubi², Florent Bringer³, George Richard Kear⁴,
Robert Laronga¹, and Juan Herrera⁵

¹Schlumberger, 1325 S. Dairy Ashford Rd., Houston, Texas 77077

²Schlumberger, 1, Rue Becquerel, BP 202, Clamart CEDEX, 92142, France

³Schlumberger, Base MD1, BP 76, Hassi-Messaoud, 30500, Algeria

⁴Schlumberger (Retired), 725 Bristol Ln., Conway, Arkansas 72034

⁵Schlumberger, 5599 San Felipe St., Houston, Texas 77056

GCAGS Explore & Discover Article #00356*

http://www.gcags.org/exploreanddiscover/2018/00356_kumar_et_al.pdf

Posted September 29, 2018.

*Article based on a full paper published in the *GCAGS Transactions* (see footnote reference below), which is available as part of the entire 2018 *GCAGS Transactions* volume via the GCAGS Bookstore at the Bureau of Economic Geology (www.beg.utexas.edu) or as an individual document via AAPG Datapages, Inc. (www.datapages.com), and delivered as an oral presentation at the 68th Annual GCAGS Convention and 65th Annual GCSSEPM Meeting in Shreveport, Louisiana, September 30–October 2, 2018.

ABSTRACT

A leading reason millions of dollars are spent taking a whole core is to get a core slab for detailed geological interpretation. A core slab provides geologists a continuous view of the rock in 2D, exactly as one would see in a road-cut or how one looks at any picture. A 2D view is the perfect way to do geological interpretation from a core. Another very effective source for detailed geological interpretation is the borehole image. Borehole images provide a continuous image of the subsurface geology as seen in the borehole wall. The images are presented as an unwrapped cylinder of the borehole wall. The unwrapping process allows a 3D surface to be displayed and worked on as a pseudo-2D surface. However, in this view, planes, such as bedding planes, fractures, faults, etc., get displayed as sinusoids rather than as straight lines as seen in core slabs. Conducting interpretation visually based on these “sinusoidal” images requires lots of training and experience, and many industry geologists are not able to comprehend the details in these “sinusoidal view” borehole images even though they may be excellent geologists. If a geologist can be provided with borehole images where planes are seen as straight lines, as in a slabbed core, the geologist is able to extract more information from the image and do superior geological interpretations.

This paper discusses an advanced new mode of displaying borehole images—in true 2D in a slabbed-core-like format. The paper also presents cases from different geological settings demonstrating the value of the gain in geological interpretation using the new image visualization format.

Originally published as: Kumar, A., J. Kherroubi, F. Bringer, G. Richard Kear, R. Laronga, and J. Herrera, 2018, Slabbing borehole images: A true 2D visualization of wellbore geology: Gulf Coast Association of Geological Societies Transactions, v. 68, p. 285–297.