



# MINIMIZE DRILLSTRING VIBRATIONS TO OPTIMIZE DRILLING PERFORMANCE

## H&P INTRODUCES THE DRILLSCAN® SOFTWARE FORCED VIBRATION MODULE TO HELP SELECT THE OPTIMAL BOTTOMHOLE ASSEMBLY (BHA) DESIGN

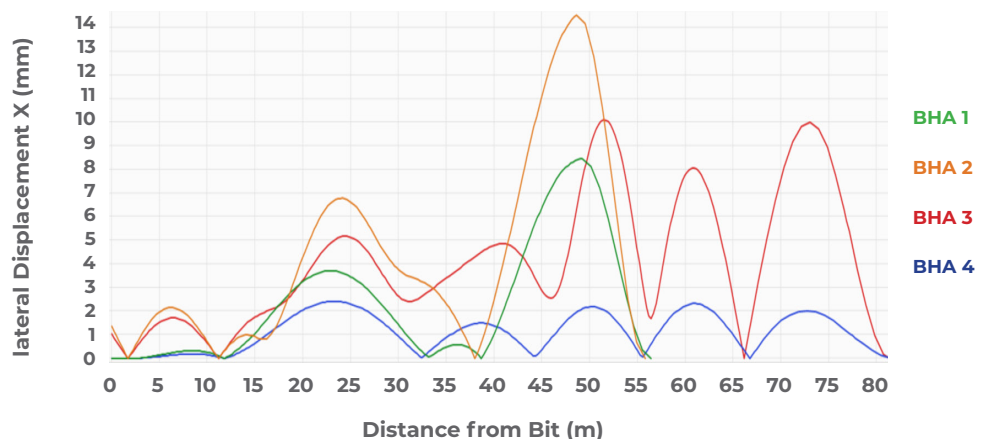
Drillstring vibrations habitually cause downhole BHA failures. While the drillstring will always be subject to these vibrations, H&P has developed a physics-based module that selects the optimal BHA design to enhance overall drilling performance.

- Quantifies the severity of vibrations along the string
- Benchmarks multiple BHA proposals with a few clicks
- Recommends peak drilling parameters for any type of BHA
- Helps ensure adequate placement of sensitive equipment
- Simple & accessible for all levels of drilling engineers

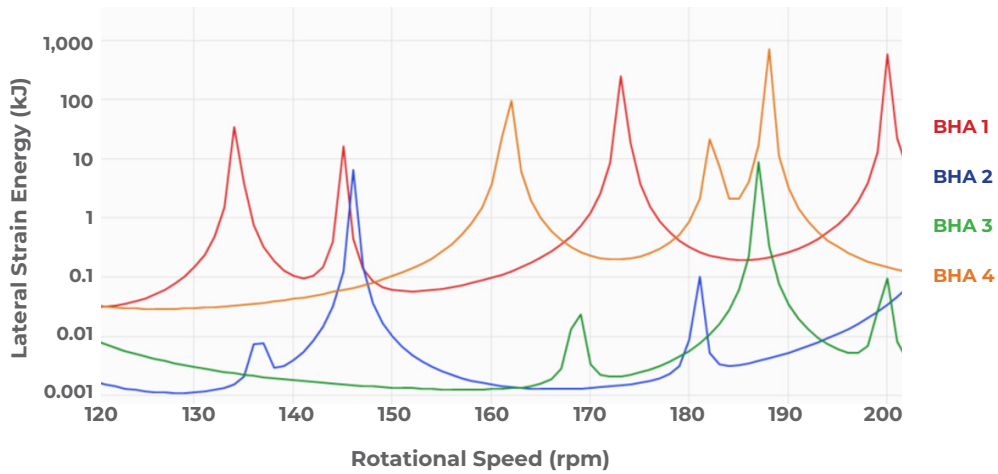
### SO HOW DOES IT WORK?

The Forced Vibrations module features a comprehensive interface to quantify the impact of any excitation source along the drillstring. The drilling engineer can investigate the potential impact of lateral, torsional, and axial excitation sources along the drilling string by calculating critical speeds, vibration amplitude, and strain energy from any BHA. Additionally, this module allows for individual investigation into each excitation source to help engineers determine the root cause of the vibration in order to mitigate future dysfunctions.

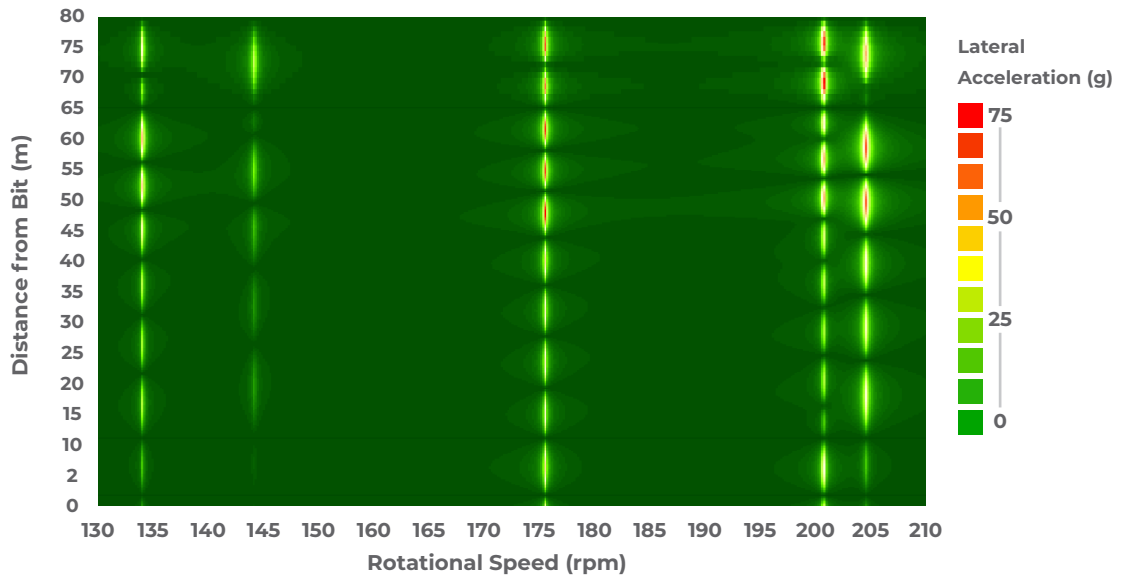
Linearized contact forces and hypothesis within the Forced Vibration algorithm allows for quick calculation and analysis time on multiple BHAs simultaneously.



**Figure 1:**  
Radial displacement profiles along the string for different BHA



**Figure 2:**  
RPM selection by minimizing BHA strain energy



**Figure 3:**  
Vibration severity along the string for a whole range of RPM

**CONTACT US**

For more information on Forced Vibrations from H&P Advanced Well Engineering or to schedule a demo, contact us at: [helmerichpayne.com/contact](https://helmerichpayne.com/contact).

**It's time to follow through on your drilling performance potential.**

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