

Adaptive Noise Cancellation for Electromagnetic-while-Drilling System

<< Results | < Previous | Next >
Print

Sign In or Purchase
to View Full Text
Request Permissions

100
Full
Text Views

Export to Collabratec

1 Alerts
Author(s)

Liu Keman Liu Keman

View All Authors

AbstractAuthorsFiguresReferencesCitationsKeywords

Abstract: An electromagnetic telemetry system is a real time data transmission system for drill string telemetry, which is detected the electromagnetic signal between the wellhead and dipole on the surface. The well-site noise is an important factor that affects the electromagnetic MWD system transmission performance. An adaptive noise cancellation method was studied to enhance the EM-MWD receiver's ability to extract very weak signals from large amounts of well site noise. Firstly, the principle of MWD i... **View more**

Metadata

Abstract: An electromagnetic telemetry system is a real time data transmission system for drill string telemetry, which is detected the electromagnetic signal between the wellhead and dipole on the surface. The well-site noise is an important factor that affects the electromagnetic MWD system transmission performance. An adaptive noise cancellation method was studied to enhance the EM-MWD receiver's ability to extract very weak signals from large amounts of well site noise. Firstly, the principle of MWD is introduced, and then the characteristic of well site noise is described briefly. Thirdly, step-size parameter μ is modified based on the noise characteristics of the well site. Finally, experimental results show that the modified LMS algorithm can suppress the well site noise 3-9dB compared with LMS algorithm. And the modified LMS algorithm has faster convergence speed, smaller steady and lower excess mean square error.

Published in: 2016 3rd International Conference on Information Science and Control Engineering (ICISCE)

Date of Conference: 8-10 July 2016 **INSPEC Accession Number:** 16430473

Date Added to IEEE Xplore: 03 November 2016 **DOI:** 10.1109/ICISCE.2016.268

ISBN Information: **Publisher:** IEEE
Conference Location: Beijing, China

Related Articles

Siren detection and driver assistance using modified minimum mean square error m...

Optimum Soft Threshold Technique for Fractal Signals Denoising

Optimal threshold determination for multiscale product in wavelet denoising

View All View All

ContentsContents



Full Text

Authors

References

Citations

Keywords

Related Articles

Back to Top

Download PDF	I. Introduction EM-MWD system uses electromagnetic waves to transmit downhole measured data in real time to the surface during conventional and under-balanced horizontal and directional drilling operations. EM telemetry transmits information through the formation to the surface antenna, where it is received and sent to a data acquisition system to be decoded and processed. A receiver is connected to the ground at surface where the electromagnetic data is picked up and recorded. A receiver detected the voltage between the toroid and the drill pipe. It has been found that, however, in deep or noisy well applications, conventional electromagnetic MWD system are easily affect by the noise of well site ^[1] [2].	
Download Citation		Full Text
View References		Authors
Email		References
Print		Citations
Request Permissions		Keywords
Export to Collabratec		Related Articles
Alerts		Back to Top

Read document

- Authors
- References
- Keywords
- Related Articles

IEEE Account » Change Username/Password » Update Address	Purchase Details » Payment Options » Order History » View Purchased Documents	Profile Information » Communications Preferences » Profession and Education » Technical Interests	Need Help? » US & Canada: +1 800 678 4333 » Worldwide: +1 732 981 0060 » Contact & Support
---	---	---	--

About IEEE Xplore | Contact Us | Help | Accessibility | Terms of Use | Nondiscrimination Policy | Sitemap | Privacy & Opting Out of Cookies

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.
© Copyright 2018 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.

IEEE Account

Profile Information

Purchase Details

Need Help?

Other

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2018 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.

US & Canada: +1 800 678 4333

Worldwide: +1 732 981 0060