

DOE OSTI Open Science Infrastructure

NISO Plus 2022
February 15th, 2022

Carly Robinson
Assistant Director for
Information Products and Services



U.S. DEPARTMENT OF
ENERGY

Office of
Science | Office of Scientific and
Technical Information

DOE OSTI Mission and Services

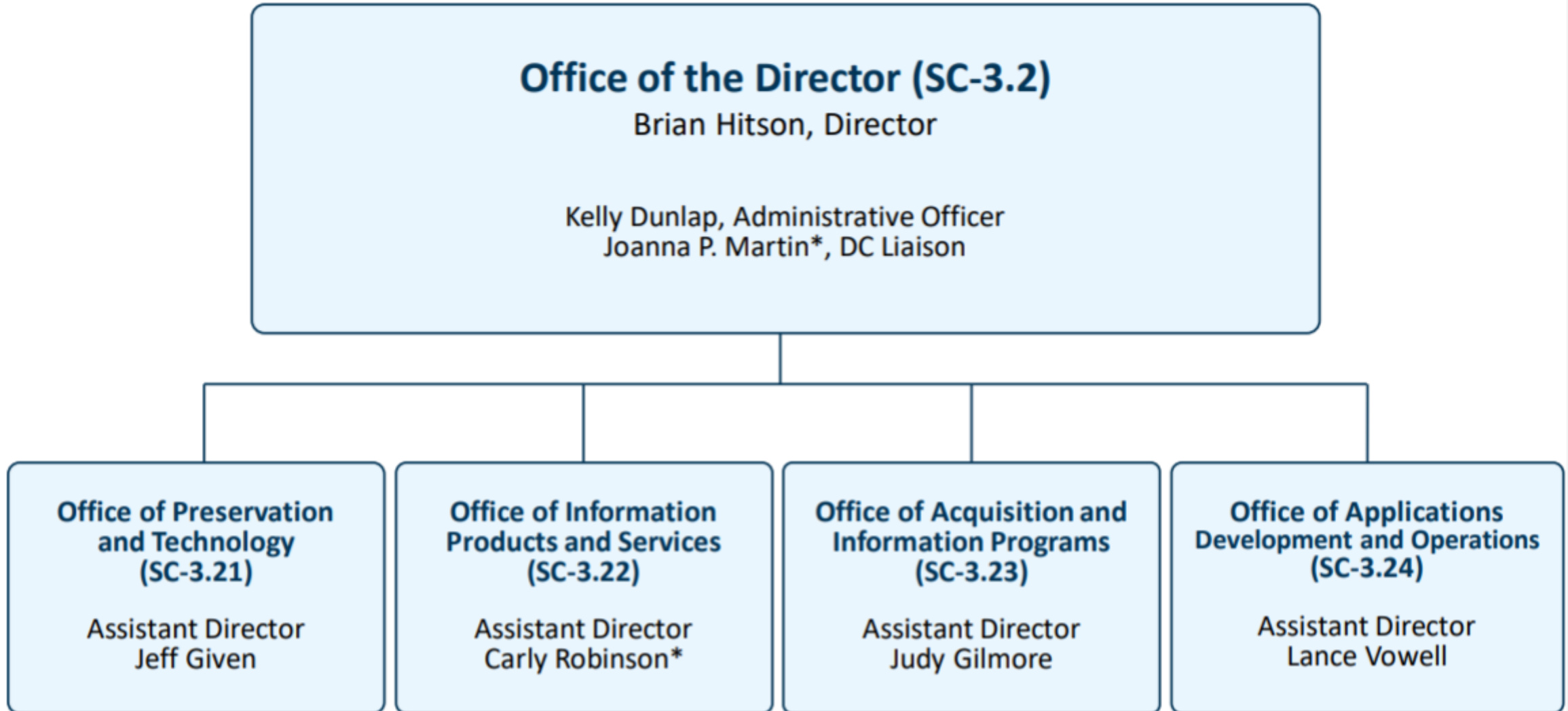


Mission: The Office of Scientific and Technical Information (OSTI) collects, preserves, and disseminates DOE-funded research and development results, both through OSTI search tools and through other commonly-used search engines.

Required by several laws: Energy Policy Act of 2005, P.L. 109-58, Section 982: “The Secretary, through the Office of Scientific and Technical Information, shall maintain within the Department publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial applications activities supported by the Department.”

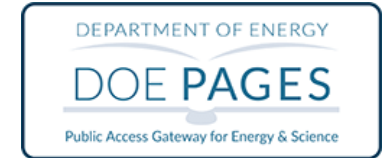


DOE OSTI Organization



OSTI Strategic Priorities

- Develop and provide leading-edge search tools



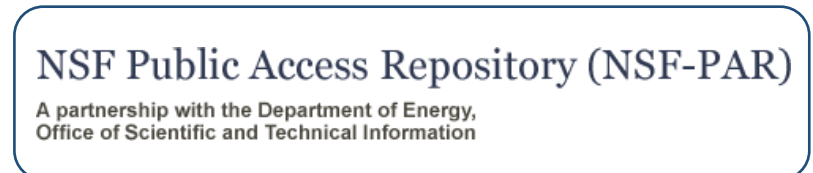
-
- Promote open science and linking research objects through persistent identifier services



-
- Integrate AI/ML into OSTI workflows and tools for labor savings, metadata quality enhancement, and increased search precision

-
- Support strategic decision making through analytics of R&D outputs

-
- Partner with other agencies and private sector to promote access to unclassified R&D results



Ingesting DOE R&D Results Infrastructure



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United States Department of Energy Energy Link System (E-Link)

DOE STI Management System

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4. Content

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9. Summary

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Last Saved Using:

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File Format:

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Audiovisual Content:

Language: English

Country: US

Record Type: 241.1 Web Form

Availability:

Publication Date:

Title: The engineering development program of RFX

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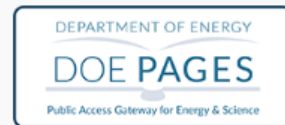
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Primary Search Tool

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- ☐ Patent
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- ☐ Citation Only

PUBLICATION DATE

1. Abstract for Accelerator Magnets Magnetic Field Measurements

The chapter develops the formalism for the two-dimensional representation of the fields which are commonly found in accelerator magnets. The chapter describes the sense windings and associated components used in the precise measurement of these fields.

[Full Text Available](#)

2. NERC MISOPS

This investigation was commissioned by the Office of Electricity of the Department of Energy in response to reviewing the NERC State of Reliability report. The study is an attempt to proactively address electric utility industry needs. "Monitoring, analyzing, and tracking trends in Protection System Misoperations are critical to improve BES reliability. Historically, Protection System Misoperations have exacerbated the severity of most cascading power outages." [1] The NERC misoperations data shows that unnecessary trips are by far the leading category of reported misoperations and that a majority of misoperations are those of line protection packages. A significant number of mis-operations are [more](#)

<https://doi.org/10.2172/1836418> | [Full Text Available](#)

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Optimization and supervised machine learning methods for fitting numerical physics models without derivatives

Full Record

References (39)

Other Related Research

JOURNAL ARTICLE:


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Abstract

Here, we address the calibration of a computationally expensive nuclear physics model for which derivative information with respect to the fit parameters is not readily available. Of particular interest is the performance of optimization-based training algorithms when dozens, rather than millions or more, of training data are available and when the expense of the model places limitations on the number of concurrent model evaluations that can be performed. As a case study, we consider the Fayans energy density functional model, which has characteristics similar to many model fitting and calibration problems in nuclear physics. We analyze hyperparameter tuning considerations and variability associated with stochastic optimization algorithms and illustrate considerations for tuning in different computational settings.

Authors: [Bollapragada, Raghu](#)  ^[1]; [Menickelly, Matt](#)  ^[2]; [Nazarewicz, Witold](#)  ^[3]; [O'Neal, Jared](#)  ^[2]; [Reinhard, Paul-Gerhard](#)  ^[4]; [Wild, Stefan M.](#)  ^[2]

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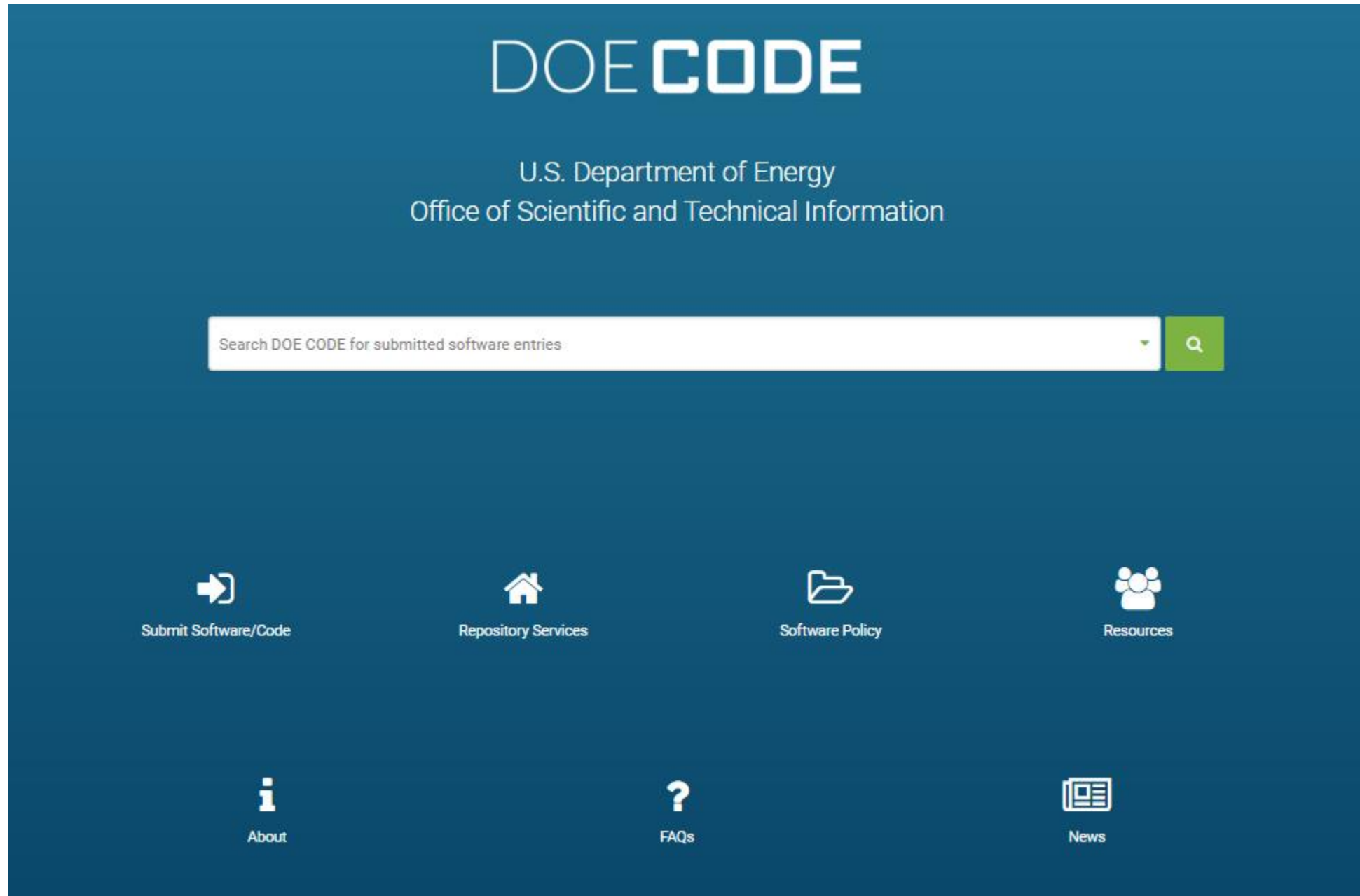
Publication Date: 2021-12-31

Research Org.: Argonne National Lab. (ANL), Argonne, IL (United States)

Sponsoring Org.: USDOE Office of Science (SC), Nuclear Physics (NP); USDOE Office of Science (SC), Advanced Scientific Computing Research (ASCR)

OSTI Identifier: 1765468

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1. AutoBEM-DynamicArchetypes

Bass, Brett Release Date: 2022-03-01

Automatic Building Energy Modeling (AutoBEM, <https://bit.ly/AutoBEM>) has been used to create an OpenStudio and EnergyPlus building energy model of 122.9 million U.S. buildings (<https://bit.ly/ModelAmerica>). Simulating and analyzing a model of every building for large areas (e.g. cities) is often not feasible. This dynamic archotyping capability uses a representative building and calculates a floor-space multiplier that allows millions of buildings to be represented by less than 100 buildings. This script (WRF_Archetypes_Parallel.py) calculates these building archetypes for each of the grid cells from a Weather Research and Forecasting (WRF) model in a parallel fashion. The script works by looping through each of [More>>](#)

<https://doi.org/10.11578/dc.20220110.1> | [Repository URL](#)

2. initAnalysis

Craig, Chris Release Date: 2022-02-04

A tool to quickly perform recon in the init process of a given firmware.

<https://doi.org/10.11578/dc.20220107.1> | [Repository URL](#)

3. MEUMAPPS (C++ Version)

Questions?



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