



US 20220368133A1

(19) **United States**

(12) **Patent Application Publication**
WEN et al.

(10) **Pub. No.: US 2022/0368133 A1**

(43) **Pub. Date: Nov. 17, 2022**

(54) **METHOD AND SYSTEM FOR EVALUATING
INERTIA OF POWER SYSTEM AND
STORAGE MEDIUM**

(52) **U.S. Cl.**

CPC *H02J 3/241* (2020.01); *H02J 2203/20*
(2020.01); *H02J 2203/10* (2020.01)

(71) Applicant: **Hunan University**, Changsha (CN)

(57)

ABSTRACT

(72) Inventors: **Yunfeng WEN**, Changsha (CN); **Wuqi
ZHANG**, Changsha (CN); **Wei GUO**,
Changsha (CN)

A method and a system for evaluating inertia of a power system and a storage medium. The method includes: injecting a cosine active power disturbance into the power system by small-disturbance injection, and obtaining frequency response at a node where the disturbance is injected, where the active power disturbance can be an energy storage, wind power, or photovoltaic power; acquiring an evaluation framework of inertia and frequency regulation capability of the power system according to relative characteristics of a frequency response function; and constructing a mathematical relationship between the impedance and frequency response characteristics according to a relationship among active power disturbance, frequency fluctuation and impedance.

(21) Appl. No.: **17/873,855**

(22) Filed: **Jul. 26, 2022**

(30) **Foreign Application Priority Data**

Aug. 16, 2021 (CN) 202110933864.9

Publication Classification

(51) **Int. Cl.**

H02J 3/24 (2006.01)

