

US20030085296A1 - Hurricane and tornado control device - Google Patents

Hurricane and tornado control device [Download PDF](#)

Info

Publication number

US20030085296A1 US20030085296A1 US09/985,284 US98528401A US2003085296A1 US
20030085296 A1 US20030085296 A1 US 20030085296A1 US 98528401 A US98528401 A US
98528401A US 2003085296 A1 US2003085296 A1 US 2003085296A1

Authority

US
United States

Prior art keywords

sound waves
weather system
weather
formation
storm

Prior art date

2001-11-02

Legal status (The legal status is an assumption and is not a legal conclusion. Google has not performed a legal analysis and makes no representation as to the accuracy of the status listed.)

Abandoned

Application number

US09/985,284

Inventor

Andrew Waxmanski

Current Assignee (The listed assignees may be inaccurate. Google has not performed a legal analysis and makes no representation or warranty as to the accuracy of the list.)

Individual

Original Assignee

Individual

Priority date (The priority date is an assumption and is not a legal conclusion. Google has not performed a legal analysis and makes no representation as to the accuracy of the date listed.)

2001-11-02

Filing date

2001-11-02

Publication date

2003-05-08

2001-11-02 Application filed by Individual filed Critical Individual

2001-11-02 Priority to US09/985,284 priority Critical patent/US20030085296A1/en

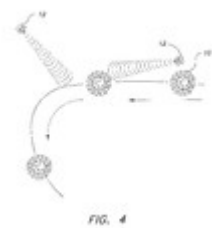
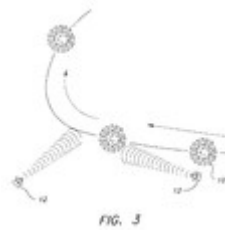
2003-05-08 Publication of US20030085296A1 publication Critical patent/US20030085296A1/en

Status Abandoned legal-status Critical Current

Links

- [USPTO](#)
- [USPTO PatentCenter](#)
- [USPTO Assignment](#)
- [Espacenet](#)
- [Global Dossier](#)
- [Discuss](#)

Images



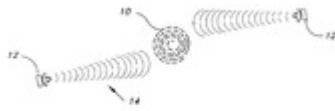


FIG. 5

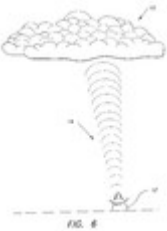


FIG. 6

Classifications

- A—HUMAN NECESSITIES
- A01—AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING
- A01G—HORTICULTURE; CULTIVATION OF VEGETABLES, FLOWERS, RICE, FRUIT, VINES, HOPS OR SEAWEED; FORESTRY; WATERING
- A01G15/00—Devices or methods for influencing weather conditions

Definitions

- the present invention generally relates to a method of weather control. More specifically, the present invention is drawn to a method of employing high decibel sound waves to affect the formation of weather systems.
- hurricanes are more predictable as to formation and direction. Hurricanes are born over warm tropical oceans and will most likely develop from lower atmosphere storm clusters which coalesce to form a tropical storm. Under certain conditions, water vapor pushed up from the ocean's surface will fuel the tropical storm, creating the violent rotating winds which define a hurricane. Since warm water is the fuel, hurricanes will last much longer over water than over land.
- U.S. Pat. No. 230,067 (Ruggles), U.S. Pat. No. 1,279,823 (Balsillie), and U.S. Pat. No. 2,527,230 (Schaefer et al.) show methods of cloud seeding for the production of rain.
- U.S. Pat. No. 3,606,153 (Boucher) shows a method of dispersing fog by employing microwaves.
- British Patent 2,156,647A utilizes explosives to generate a cyclone.
- the present invention requires the recognition of the low atmosphere weather systems near the earth's surface that have the potential to produce hurricanes, tornadoes or rain.
- mega generators are employed to produce high decibel sound waves, which sound waves are projected toward the clouds and rotating winds which form the low atmosphere systems.
- the high frequency sound waves will function to disrupt and slow the rotating winds, thereby preventing a hurricane or tornado from forming.
- the high frequency sound waves will function to enhance the rotation of the winds, thereby causing a hurricane or tornado to form.
- the inventive concept also incorporates utilization of high decibel sound waves to alter the direction of the low atmosphere systems, thereby determining the path of the potential hurricane or tornado.
- Sound waves may also be projected at potentially non-violent weather systems to cause such systems to produce rain.

- Still another object of the invention is to provide a process to produce rain from low atmospheric weather systems.
- FIG. 1 is an environmental, schematic view of sound waves directed toward a system which may form a hurricane or tornado according to the present invention.
- FIG. 2 is a schematic top view of sound waves directed toward a system which may form a hurricane or tornado according to the present invention.
- FIG. 3 is a schematic view of sound waves directed to steer a hurricane or tornado to the right according to the present invention.
- FIG. 4 is a schematic view of sound waves directed to steer a hurricane to the left according to the present invention.
- FIG. 5 is a schematic view of sound waves directed to create a hurricane or tornado according to the present invention.
- FIG. 6 is a schematic view of sound waves directed at a system to generate rain.
- the present invention employs at least two high decibel audio generators 12 positioned to focus and project sound waves 14 at a weather system generally designated at 10 .
- Weather system 10 comprises low atmosphere clouds and rotating winds having the potential to develop into a full fledged hurricane or tornado.
- Audio generators 12 are designed to produce sound waves 14 in the 100-2000 Hz frequency range. Generators 12 are not part of the inventive concept per se. For maximum effectiveness, the sound waves should be focused and projected toward a peripheral area of the rotating weather system and countercurrent to the rotating direction. As best seen in FIG. 2, generators 12 are disposed to direct the sound waves 14 in an area where the rotating velocity is approximately ten mph. When employed on a ship at sea, it may be necessary to utilize gyroscopes as mounts to ensure steady focus and projection of the generators.
- FIGS. 3 and 4 schematically illustrate how generators 12 may focus sound waves 14 to direct the path of the weather systems.
- FIG. 3 illustrates how the sound waves are focused to guide a weather system 10 so that the system makes a turn to the right.
- FIG. 4 illustrates how the weather system may be turned to the left.
- FIG. 5 illustrates generators 12 positioned to project sound waves concurrent with the rotational direction of winds to reinforce the rotating vector of weather system 10 , thereby assisting the system in attaining hurricane or tornado status.
- a generator 12 projects waves 14 at a low atmospheric system 10 to produce rain.
- the contemplated projected frequency range is one thousand to two thousand fps.
- the sound waves are projected at an angle which would induce a rotational vector in the system having a partial rotational waddle of about five hundred to two thousand fpm.

Landscapes

- Life Sciences & Earth Sciences (AREA)
- Atmospheric Sciences (AREA)
- Environmental Sciences (AREA)
- Buildings Adapted To Withstand Abnormal External Influences (AREA)

Abstract

A method is disclosed for affecting the formation and/or direction of a low atmospheric weather system. Audio generators are positioned to project sound waves toward a peripheral area of a weather system. The sound waves are generated at a frequency to affect the formation of the weather system in a manner to disrupt, enhance or direct the formation. The sound waves can also be projected in a manner to cause the system to produce rain.

Description

BACKGROUND OF THE INVENTION

- 1. Field of the Invention [0001]
 - The present invention generally relates to a method of weather control. More specifically, the present invention is drawn to a method of employing high decibel sound waves to affect the formation of weather systems. [0002]
- 2. Description of Related Art [0003]
 - The ferocious winds and rains of tornadoes and hurricanes account for the loss of many lives and billions of dollars annually. Names such as “Hugo” and “Andrew” have become legendary when people talk of destruction caused by “Mother Nature”. [0004]
 - In the U.S.A., the U.S. Weather Research Program and the National Oceanic Atmospheric Administration have invested millions of dollars in research to find a system(s) which will predict with accuracy the formation and path of potentially violent weather systems. [0005]
 - Of the two, hurricanes are more predictable as to formation and direction. Hurricanes are born over warm tropical oceans and will most likely develop from lower atmosphere storm clusters which coalesce to form a tropical storm. Under certain conditions, water vapor pushed up from the ocean's surface will fuel the tropical storm, creating the violent rotating winds which define a hurricane. Since warm water is the fuel, hurricanes will last much longer over water than over land. [0006]
 - Although occurring in many parts of the world, data collected by the National Oceanic and Atmospheric Administration (NOAA) indicates that tornadoes appear most frequently in the United States east of the Rocky Mountains during the spring and summer months. In an average year, about eight hundred tornadoes are reported. Tornadoes are formed when a change in wind direction and an increase in wind speed create an invisible, horizontal rotating effect in the lower atmosphere as a more powerful weather system (thunderstorm) develops in the higher atmosphere. Rising air within the thunderstorm causes the lower atmosphere rotating air to tilt from horizontal to vertical and form a violently rotating column of air extending from the thunderstorm to the ground. Tornadoes may last from a few minutes (weak) to over an hour (violent) and have wind speeds which range from about one hundred miles per hour to over two hundred miles per hour. [0007]
 - Ongoing research is also being done to cause weather systems to produce rain where needed. This capability would be of obvious advantage in the farming industry. [0008]
 - There are systems disclosed in prior art for preventing the formation of hurricanes and tornadoes. For example, U.S. Pat. No. 2,903,188 (Hutchinson), U.S. Pat. No. 5,441,200 (Rovella, II), and British Patent 2,186,781A disclose methods of disruption of tornado formations which involve cloud seeding. [0009]
 - U.S. Pat. No. 1,980,171 (Amy), U.S. Pat. No. 2,480,275 (van Straten, et al.) and U.S. Pat. No. 4,848,656 (Magill) disclose the use of sound waves to control water droplet content in clouds. [0010]
 - U.S. Pat. No. 230,067 (Ruggles), U.S. Pat. No. 1,279,823 (Balsillie), and U.S. Pat. No. 2,527,230 (Schaefer et al.) show methods of cloud seeding for the production of rain. [0011]
 - U.S. Pat. No. 3,606,153 (Boucher) shows a method of dispersing fog by employing microwaves. [0012]

- U.S. Pat. No. 5,411,209 (oilivier) and U.S. Pat. No. 5,445,321 (Oilivier) are concerned with employing shock waves to prevent hail. [0013]
- British Patent 2,156,647A utilizes explosives to generate a cyclone. [0014]
- None of the above inventions and patents, taken either singly; or in combination, is seen to disclose a method of employing sound waves to affect the formation of weather systems as will subsequently be described and claimed in the instant invention. [0015]
- SUMMARY OF THE INVENTION
- The present invention requires the recognition of the low atmosphere weather systems near the earth's surface that have the potential to produce hurricanes, tornadoes or rain. When recognition is realized, mega generators are employed to produce high decibel sound waves, which sound waves are projected toward the clouds and rotating winds which form the low atmosphere systems. In one scenario, the high frequency sound waves will function to disrupt and slow the rotating winds, thereby preventing a hurricane or tornado from forming. In another scenario, the high frequency sound waves will function to enhance the rotation of the winds, thereby causing a hurricane or tornado to form. The inventive concept also incorporates utilization of high decibel sound waves to alter the direction of the low atmosphere systems, thereby determining the path of the potential hurricane or tornado. [0016]
- Sound waves may also be projected at potentially non-violent weather systems to cause such systems to produce rain. [0017]
- Accordingly, it is a principal object of the invention to provide a process for affecting the formation of low atmospheric weather systems. [0018]
- It is another object of the invention to provide a process to alter the direction of weather systems which may produce hurricanes and tornadoes. [0019]
- It is a further object of the invention to provide a process to disrupt or enhance the formation of hurricanes and tornadoes. [0020]
- Still another object of the invention is to provide a process to produce rain from low atmospheric weather systems. [0021]
- It is an object of the invention to provide improved steps and arrangements thereof in a method for the purposes described which are dependable and fully effective in accomplishing their intended purposes. [0022]
- These and other objects of the present invention will become readily apparent upon further review of the following specification and drawings.[0023]
- BRIEF DESCRIPTION OF THE DRAWINGS
- FIG. 1 is an environmental, schematic view of sound waves directed toward a system which may form a hurricane or tornado according to the present invention. [0024]
- FIG. 2 is a schematic top view of sound waves directed toward a system which may form a hurricane or tornado according to the present invention. [0025]
- FIG. 3 is a schematic view of sound waves directed to steer a hurricane or tornado to the right according to the present invention. [0026]

- FIG. 4 is a schematic view of sound waves directed to steer a hurricane to the left according to the present invention. [0027]
- FIG. 5 is a schematic view of sound waves directed to create a hurricane or tornado according to the present invention. [0028]
- FIG. 6 is a schematic view of sound waves directed at a system to generate rain.[0029]
- Similar reference characters denote corresponding features consistently throughout the attached drawings. [0030]
- DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS
- Referring to FIGS. 1 and 2, the present invention employs at least two high decibel [0031] audio generators **12** positioned to focus and project sound waves **14** at a weather system generally designated at **10**. Weather system **10** comprises low atmosphere clouds and rotating winds having the potential to develop into a full fledged hurricane or tornado. Audio generators **12** are designed to produce sound waves **14** in the 100-2000 Hz frequency range. Generators **12** are not part of the inventive concept per se. For maximum effectiveness, the sound waves should be focused and projected toward a peripheral area of the rotating weather system and countercurrent to the rotating direction. As best seen in FIG. 2, generators **12** are disposed to direct the sound waves **14** in an area where the rotating velocity is approximately ten mph. When employed on a ship at sea, it may be necessary to utilize gyroscopes as mounts to ensure steady focus and projection of the generators.
- Since hurricanes and tornadoes contain large amounts of moisture, it may be desirable to direct these systems to areas in need of rain before disruption. FIGS. 3 and 4 schematically illustrate how [0032] generators **12** may focus sound waves **14** to direct the path of the weather systems. FIG. 3 illustrates how the sound waves are focused to guide a weather system **10** so that the system makes a turn to the right. FIG. 4 illustrates how the weather system may be turned to the left.
- Under certain conditions, a nation might find it advantageous to create a tornado or hurricane. For example, creation of a strong storm system could deter an enemy attack. FIG. 5 illustrates [0033] generators **12** positioned to project sound waves concurrent with the rotational direction of winds to reinforce the rotating vector of weather system **10**, thereby assisting the system in attaining hurricane or tornado status.
- As illustrated in FIG. 6, a [0034] generator **12** projects waves **14** at a low atmospheric system **10** to produce rain. The contemplated projected frequency range is one thousand to two thousand fps. The sound waves are projected at an angle which would induce a rotational vector in the system having a partial rotational waddle of about five hundred to two thousand fpm.
- It is to be understood that the present invention is not limited to the sole embodiments described above, but encompasses any and all embodiments within the scope of the following claims. [0035]
-

Claims (12)

I claim:

1. A method of affecting the formation and direction of a weather system comprising:
 locating a low atmospheric weather system having the potential to develop into a storm, said weather system having winds rotating in an observed direction; and
 projecting high decibel sound waves toward a peripheral area of said weather system, whereby to affect the

formation and direction of said weather system.

2. A method according to claim 1 wherein the winds of said weather system rotate at a higher velocity in a central area of said system and at a lower velocity at said peripheral area of said system and said sound waves are projected at said peripheral area where said winds have a velocity of about ten mph.
3. A method according to claim 2, wherein said sound waves are projected at a frequency range of 100-2000 Hz.
4. A method according to claim 3, wherein said weather system has the potential to develop into a destructive storm and said high decibel sound waves are projected countercurrent to said observed direction whereby to disrupt the formation of said weather system.
5. A method according to claim 4, wherein said destructive storm is a hurricane.
6. A method according to claim 4, wherein said destructive storm is a tornado.
7. A method according to claim 3, wherein said weather system has the potential to develop into a destructive storm and said high decibel sound waves are projected concurrently to said observed direction whereby to enhance the formation of said weather system.
8. A method according to claim 7, wherein said destructive storm is a hurricane.
9. A method according to claim 7, wherein said destructive storm is a tornado.
10. A method of affecting the formation a weather system comprising:
locating a low atmospheric weather system having the potential to produce rain; and
projecting high decibel sound waves toward said weather system, whereby to cause rain to emanate from said weather system.
11. A method according to claim 10, including the step of projecting said sound waves at a frequency range of between one thousand to thousand fps.
12. A method according to claim 11, including the step of projecting said sound waves at an angle which would induce a rotational vector in the system having a partial rotational waddle of about five hundred to two thousand fpm.

US09/985,284 2001-11-02 2001-11-02 Hurricane and tornado control device Abandoned

[US20030085296A1 \(en\)](#)

Priority Applications (1)

Application Number	Priority Date	Filing Date	Title
US09/985,284 US20030085296A1 (en)	2001-11-02	2001-11-02	Hurricane and tornado control device

Applications Claiming Priority (1)

Application Number	Priority Date	Filing Date	Title
US09/985,284 US20030085296A1 (en)	2001-11-02	2001-11-02	Hurricane and tornado control device

Publications (1)

Publication Number	Publication Date
US20030085296A1 true US20030085296A1	2003-05-08

Publication Number

Publication Date

[\(en\)](#)

Family

ID=25531340

Family Applications (1)

Application Number	Title	Priority Date	Filing Date
US09/985,284 Abandoned US20030085296A1 (en)	2001-11-02	2001-11-02	Hurricane and tornado control device

Country Status (1)

Country	Link
US (1)	US20030085296A1 (en)

Cited By (17)

* Cited by examiner, † Cited by third party

Publication number	Priority date	Publication date	Assignee	Title
US20080023566A1 (en) *	2005-02-10	2008-01-31	Jozef Solc	Method of and a device for the reduction of tropical cyclones destructive force
US20090014549A1 (en) *	2007-07-09	2009-01-15	Alfred Rosen	Processes and means for reducing the intensity of tropical cyclones
US20100001118A1 (en) *	2008-07-03	2010-01-07	Nelson Riley H	Tornado disarming network
US20100051714A1 (en) *	2007-07-09	2010-03-04	Alfred Rosen	Processes and apparatus for reducing the intensity of tropical cyclones
US20100276533A1 (en) *	2005-12-31	2010-11-04	Matteo Bonifacio Gravina	Thermal Energy Radiance Expander

Publication number	Priority date	Publication date	Assignee	Title
WO2011011370A1 (en) *	2009-07-20	2011-01-27	Roberts David A	Hurricane abatement system and method
US20110113792A1 (en) *	2009-09-04	2011-05-19	Jayden David Harman	Heat Exchange and Cooling Systems
US20110168797A1 (en) *	2009-07-20	2011-07-14	Neymeyer Calvin E	Method of weakening a hurricane
US20120298654A1 (en) *	2011-05-26	2012-11-29	Qasem Al-Qaffas	Method and System for Reducing Destructive Forces of a Hurricane
WO2013070254A1 (en) *	2011-11-09	2013-05-16	Jayden Harman	Atmospheric circulation system and method
CN103875489A (en) *	2014-03-12	2014-06-25	沈阳理工大学	Method for making rain by means of sound waves
US20150162854A1 (en) *	2013-12-10	2015-06-11	Rps International	System and Method for Stimulating Rainfall
US9750202B2 (en)	2007-07-09	2017-09-05	Robert M. Rosen	Processes and apparatus for reducing the intensity of tropical cyclones
CN108271598A (en) *	2017-12-26	2018-07-13	成都鼎信致远科技有限公司	A kind of device
US10433408B2 (en)	2008-07-03	2019-10-01	New York University	Methods for affecting spinning atmospheric phenomena
US11420739B2 (en) *	2016-01-29	2022-08-23	JG Entrepreneurial Enterprises LLC	Aeronautical car and associated features
US11632916B2 (en)	2019-04-02	2023-04-25	Olatunbosun Osinaike	Propagating sound through bodies of water, to generate and direct wind, for the purpose of moderating and affecting weather patterns

- 2001
 - 2001-11-02 US US09/985,284 [patent/US20030085296A1/en](#) not_active Abandoned

Cited By (25)

* Cited by examiner, † Cited by third party

Publication number	Priority date	Publication date	Assignee	Title
US7798419B2 (en)	2005-02-10	2010-09-21	Jozef Solc	Method of and a device for the reduction of tropical cyclones destructive force
US20080023566A1 (en) *	2005-02-10	2008-01-31	Jozef Solc	Method of and a device for the reduction of tropical cyclones destructive force
US20100276533A1 (en) *	2005-12-31	2010-11-04	Matteo Bonifacio Gravina	Thermal Energy Radiance Expander
US8161757B2 (en)	2007-07-09	2012-04-24	Robert M. Rosen	Processes and means for reducing the intensity of tropical cyclones
US20090014549A1 (en) *	2007-07-09	2009-01-15	Alfred Rosen	Processes and means for reducing the intensity of tropical cyclones
US20100051714A1 (en) *	2007-07-09	2010-03-04	Alfred Rosen	Processes and apparatus for reducing the intensity of tropical cyclones
US9750202B2 (en)	2007-07-09	2017-09-05	Robert M. Rosen	Processes and apparatus for reducing the intensity of tropical cyclones
US9736996B2 (en)	2007-07-09	2017-08-22	Robert M. Rosen	Processes and apparatus for reducing the intensity of tropical cyclones
US20100001118A1 (en) *	2008-07-03	2010-01-07	Nelson Riley H	Tornado disarming network
US10433408B2 (en)	2008-07-03	2019-10-01	New York University	Methods for affecting spinning atmospheric phenomena
US8153943B2 (en) *	2008-07-03	2012-04-10	Nelson Riley H	Tornado detection network
WO2011011370A1 (en) *	2009-07-20	2011-01-27	Roberts David A	Hurricane abatement system and method
US20110168797A1 (en) *	2009-07-20	2011-07-14	Neymeyer Calvin E	Method of weakening a hurricane
US20110101124A1 (en) *	2009-07-20	2011-05-05	Roberts David A	Hurricane abatement system and method
US20110113792A1 (en) *	2009-09-04	2011-05-19	Jayden David Harman	Heat Exchange and Cooling Systems
US8887525B2 (en)	2009-09-	2014-11-18	Pax Scientific, Inc.	Heat exchange and cooling systems

Publication number	Priority date	Publication date	Assignee	Title
	04			
US20120298654A1 (en) *	2011-05-26	2012-11-29	Qasem Al-Qaffas	Method and System for Reducing Destructive Forces of a Hurricane
WO2013070254A1 (en) *	2011-11-09	2013-05-16	Jayden Harman	Atmospheric circulation system and method
US20150162854A1 (en) *	2013-12-10	2015-06-11	Rps International	System and Method for Stimulating Rainfall
CN103875489A (en) *	2014-03-12	2014-06-25	沈阳理工大学	Method for making rain by means of sound waves
US11420739B2 (en) *	2016-01-29	2022-08-23	JG Entrepreneurial Enterprises LLC	Aeronautical car and associated features
US20220355925A1 (en) *	2016-01-29	2022-11-10	JG Entrepreneurial Enterprises LLC	Aeronautical car and associated features
US11713115B2 (en) *	2016-01-29	2023-08-01	JG Entrepreneurial Enterprises LLC	Aeronautical car and associated features
CN108271598A (en) *	2017-12-26	2018-07-13	成都鼎信致远科技有限公司	A kind of device
US11632916B2 (en)	2019-04-02	2023-04-25	Olatunbosun Osinaike	Propagating sound through bodies of water, to generate and direct wind, for the purpose of moderating and affecting weather patterns

Similar Documents

Publication	Publication Date	Title
US20030085296A1 (en)	2003-05-08	Hurricane and tornado control device
Camuffo et al.	2000	Sea storms in the Adriatic Sea and the Western Mediterranean during the last millennium
US20050133612A1 (en)	2005-06-23	Meteorological modification method and apparatus CIP

Publication	Publication Date	Title
Carey et al.	1985	Low-frequency ocean surface noise sources
Gibbons	2024	Tornadoes!
Lee et al.	2013	A study on a snowband associated with a coastal front and cold-air damming event of 3–4 February 1998 along the eastern coast of the Korean Peninsula
WO2007033447A1 (en)	2007-03-29	Device for inhibiting or weakining the development of tornados, hurricans or tropical cyclones
Prosperetti	1985	Bubble-related ambient noise in the ocean
Sugg	1967	The hurricane season of 1966
Dinwiddie	1959	Waterspout-tornado structure and behavior at Nags Head, NC, August 12, 1952
Hare	1977	Takoradi-Khartoum air route: General synoptic climate
Suneetha et al.	2018	An Easterly Wave Generated Heavy Rainfall Event over South India —A Case Study
Mainville	1999	The derecho of 4-5 July 1999 in southern Quebec
Fay	1962	Northbound tropical cyclone: A case history
Yh et al.	1995	Structures of the Mixed Layer and Estimates of Sea Surface Fluxes during TOGA-COARE IOP Part I: Structures of the Mixed Layer
Adewale et al.	2017	Analysis of Rainfall Data of Ikeja, Southwestern Nigeria, Using Wavelet Transform
Miles	1948	Meteorology
Mills	1988	Dancing Ledge
Montgomery	1956	Some Observations on the Tornado at Blackwell, Oklahoma 25 May 1955
Donaldson	1964	Visual observations beneath a developing tornado
Mellen et al.	1985	On the wind-wave interaction mechanism
von Winkle et al.	1985	Vertical directionality of ambient noise—A review

Publication	Publication Date	Title
Nichols	1985	Infrasonic ambient ocean noise: Northeast Pacific Ocean
Barham	1878	Cyclones and Anticyclones
Prouty	1950	Origin of Carolina Bays

Legal Events

Date	Code	Title	Description
2004-07-26	STCB	Information on status: application discontinuation	Free format text: ABANDONED -- FAILURE TO RESPOND TO AN OFFICE ACTION