

*Original Research*

# Knowledge Graph Analysis of American Literary Studies Based on Green Digital Tools

Haixia Guo<sup>1\*</sup>, Gang Zeng<sup>2\*\*</sup>

<sup>1</sup>School of Foreign Languages, Tianjin University, Tianjin 300350, China

<sup>2</sup>School of Economics and Management, Civil Aviation University of China, Tianjin 300300, China

*Received: 11 June 2023*

*Accepted: 15 July 2023*

## Abstract

Due to environmental pollution, energy consumption, climate change and other reasons, the Chinese government proposed the “double carbon” goal to encourage the wide application of green technology. The green technology represented by CiteSpace has brought new ideas to the traditional study of American literature, which is conducive to energy conservation and emission reduction and the sustainable progress of scientific research. With the help of CiteSpace tool, this paper traces the hot spots and frontiers in the field of American literature research. Through the visualization research of knowledge map of green technology, we get valuable conclusions: first, the domestic research of American literature has gradually evolved from scattered stage to mature stage. Famous scholars such as Yukuo Wang, Ruoxi Pu, Li Jin, Jincai Yang and Ying Liu have emerged. And they have made landmark achievements in feminist criticism, historical context, new slave narrative, racial discrimination, spatial turn and so on. Second, the research object is diverse and rich, and the mainstream and tributaries blend. It includes ethnic groups such as Chinese and African Americans. It focuses on writers such as Maxine Hong Kingston, Faulkner, Melville, Whitman and Hemingway, including “intertextuality”, “tea culture”, “ecocriticism” and “Orientalism”. Third, although the current research on American literature is fruitful, the discrete and multivariate distribution of specific topics is significant. The use of green technology has brought new impetus to the study of traditional literature, greatly improved the efficiency of scientific research and reduced resource consumption.

**Keywords:** sustainable development, green technology, literary studies, CiteSpace, knowledge graph

---

\*email: haixia.guo@tju.edu.cn

\*\*email: gzeng666@foxmail.com

## Introduction

Due to the frequent human activities and increasing demand, the global environmental problems are becoming increasingly serious. Due to the waste of resources, energy consumption and climate change, the world greenhouse gas emissions are increasing year by year. China is a large country of carbon dioxide emissions, and the pressure of energy conservation and emission reduction is huge [1]. In 2020, for example, China's carbon dioxide emissions reached 9.899 billion tons, accounting for about 31% of the global total. As an example, in 2020, the Chinese government proposed the strategic goal of "2030 carbon peak 2060 carbon neutral" [2, 3]. Therefore, vigorously developing emerging and green technologies such as electronic information technology has become an important direction for China's industrial structure and social sustainable development [4, 5].

Digital technology is a typical green technology, which enables the industrial economy through information tools and information technology, and stimulates the new mode and format of industrial economy. Digital technology relies on technologies such as the Internet, artificial intelligence and intelligent algorithms to subvert the operation mode of traditional industries and greatly improve the level of social sustainability [6, [7]. Specifically, on the one hand, digital technology can accelerate the informatization level of industrial economy and improve production efficiency; On the other hand, digital technology can reconstruct the original production links and innovate the production mode.

With the development of green technology, the traditional study of American literature has ushered in new opportunities for development. In the traditional scientific research activities, American literature research needs to read a lot of field literature, including the classic works of famous scholars and the latest paper achievements. If only reading paper books, it will be difficult to grasp the professional frontier in the short term. With the development of green technology, digital technology represented by CiteSpace software has brought new research ideas to the study of American literature [8, 9].

With the growing prosperity of the national economy and science and technology, American literature has sprung up and become famous. Especially since the end of World War II, it has had a profound impact on the world literary world. Although the history of the United States is only more than 200 years, a considerable number of influential classics have emerged in the field of literature. In the 1930s, the writers represented by Sinclair Lewis, Eugene O'Neill and Pearl Buck won the Nobel Prize, which greatly raised the international reputation of American literature. [10] American literary works not only convey the writers' simple understanding and emotional understanding of life, but also reflect the historical and cultural evolution of American society in

a specific period. Since the exchange between China and the United States, students studying in the United States have set off an upsurge of domestic competition through their unique life experience and translation of American literary works. Chinese scholars' study of American literature has opened a new window to examine the outside world, and has also become a channel for China to actively participate in world cultural exchanges. Some modern and contemporary Chinese new literature has been influenced by American works, such as the earliest drama "black slave crying to heaven", which is full of the shadow of the classic novel "Uncle Tom's cabin". After the founding of the People's Republic of China, the study of American literature began in the blank, and accumulated little. In 1957, the translated Moby Dick was released, which played a landmark role. After that, with the establishment of diplomatic relations between China and the United States, domestic scholars continued to deepen. Among them, the publication of a brief history of American literature compiled by Dong Hengxun and others in 1978 has milestone academic value. [11] Since the 1980s and 1990s, China's research on American literature has gradually become academic and professional, and has made breakthrough achievements in work appreciation and literary criticism.

Domestic scholars' research on American literature is in the ascendant. On October 1<sup>st</sup>, 2023, 19122 documents can be retrieved from CNKI, including 3601 in Chinese and 15629 in foreign languages. These achievements involve more than 900 journals and more than 800 writers. From the content of the study, it involves Chinese Americans, African Americans, Asian Americans, blacks, southern literature, etc; The forms of works include novels, poems and plays. Although the number of documents has an explosive growth trend, it is difficult to hide the hidden worry of uneven quality and depth of documents. The ideas and values of different literature research reflect complex and diverse ideas. Therefore, under the realistic picture of crisscross of mainstream and tributary, and different contents and paradigms, combing the current situation, hot spots and change laws of American literature research will help to accurately reflect on the problems existing in the current research. CiteSpace software, a green technology, helps to solve this problem.

CiteSpace is a green and emerging technology developed by Professor Chen Chaomei, a famous scholar. It integrates mathematical thinking, visual thinking and philosophical thinking. It can efficiently summarize the progress of a research field and play an important role in promoting sustainable scientific research and innovation.

In order to examine the specific course of Chinese scholars' research on American literature and explore the origin, current situation and prospects of relevant achievements in detail, this paper will use bibliometric theory and methods for reference to broaden the research horizon.

The possible innovations of this paper are as follows: first, based on the CiteSpace green tool, the paper will scan the achievements of domestic scholars on American Literature in recent years in a panoramic way, and systematically summarize, sort out, summarize and analyze the interactive relationship and logical level between different elements of American literature research through the visual presentation of “picture” and the series depiction of “spectrum”. [3] Second, through the quantitative study of knowledge mapping, we can accurately grasp the patterns, hot spots, trends and trends of American literature research, and provide reference for theoretical and practical research. Third, the paper provides quantitative analysis for traditional American literature research based on green technology, which is conducive to the interdisciplinary integration to achieve the sustainable development of scientific research.

### Materials and Methods

CNKI is the most authoritative database for domestic scholars to carry out humanities and social sciences research. At the same time, CSSCI journals and core journals of Peking University contain most of the high-quality papers recognized by the academic community. This paper takes the core journal papers in CNKI as the data sample, including the CSSCI journals related to American literature and the core journal papers of Peking University. Although there is overlap between the two, only one eligible document will be retained in the database. The retrieval conditions under the journal entries in the database take “American Literature” as the theme, the data range from 1992 to 2022, and the literature source categories are “CSSCI” and “core”. Because the selection is suitable for screening directly from journals, it avoids the interference data such as master thesis, newspapers and announcements in the sample.

After the data is exported from CNKI, the data format is converted first, and each record contains the author, source institution, title, downloads, citations, keywords and other information. Then CiteSpace software was used for quantitative analysis. The working principle of the software is to quantitatively analyze the data set based on the co citation theory and the path finding network algorithm, explore the key path and historical evolution law of specific research in the way of knowledge map, and reasonably predict the frontier dynamics of the research direction. [12-14] with the help of CiteSpace tools, we can carry out a variety of co-occurrence studies such as co citation network analysis, keyword network analysis, and cooperative network analysis [15-18].

### Results and Discussion

#### The Outline of American Literature Research Based on Green Technology

Focusing on the specific analysis of the amount of literature, research authors, main institutions and highly cited articles of American literature research, this paper initially outlines the basic outline of American literature research and gives a glimpse of the state of American literature research.

#### *An Analysis of the Literature Quantity of American Literature Research*

The number of papers published in core journals is one of the important indicators of the development level of specific disciplines. Fig. 1 reflects the number of papers published by domestic scholars in core journals from 1992 to 2022. A total of 924 papers were published in 29 years, realizing the growth mode of “0-1-n”. Since the first high-quality paper was included

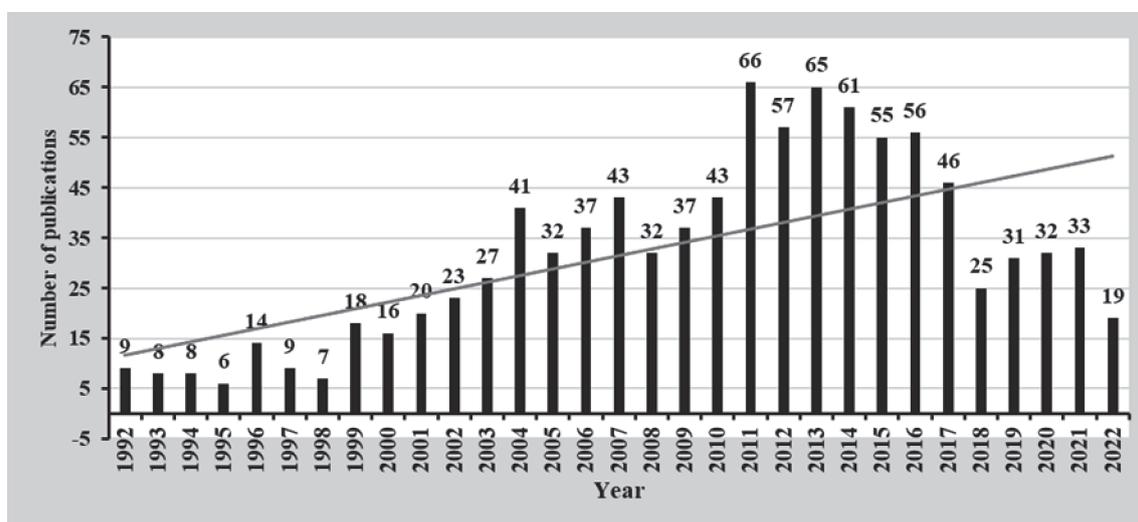


Fig. 1. Number of papers published in core journals of American literature research.

in 1992, American literature research has experienced the development route of “rise→burst→stability”. From 1992 to 2002, it was in the stage of low-speed hovering and rising, and the number of papers published in 2002 exceeded 20; From 2003 to 2011, there was a steady upward trend, and the peak value was achieved in 2011. The highest number of papers was 66, forming an upsurge of American literature research; From 2012 to 2022, although the number of papers published showed a downward trend, the overall number tended to be stable, and the number of papers published each year was more than 19, which was in the state of normalized research.

#### *An Analysis of the Authors of American Literature Studies*

According to the software operation, the knowledge map of a series of studies is obtained. As shown in Fig. 2, from the perspective of the author's network, the number of nodes is 79 and the density is 0.0032. This shows that domestic scholars have few cooperative connections on American literature research, and most of them are study type scholars, so there is more room for cooperation and exchange. At the same time, it also reflects that American literature research is a rare and unique discipline, and the influence of the discipline needs to be strengthened.

In Fig. 2, the size of the name can represent the number of documents published. In terms of the number of papers published, the current representative scholars in the field of American literature research in China are: Wang Yukuo, Pu Ruoxi, Jin Li, Yang Jincai, Liu Ying,

Jin Hengshan, Jiang Ningkan, Yaonaiqiang, Pu Lixin, Tian Junwu, Hu Tiesheng, Zhang Jun, etc. Most of these scholars are academic masters with high academic influence and come from double first-class universities such as Nanjing post and telecommunications university, Jinan University, Beiwai University, Nanjing University, Nankai University, East China Normal University and Jilin University. These scholars play an important role in the cultural collision and exchange between China and the United States through their efforts to further develop the study of American literature. However, the research in this field also needs to attract a group of young scholars, and it is necessary to establish a reasonable echelon of academic research team. Therefore, it is meaningful to encourage and support more young scholars to carry out research in the field of American literature. The government and academic departments can create a more attractive atmosphere through academic seminars, special fund projects or column solicitation.

#### *Analysis of Frequently Cited Literature in American Literature Research*

According to the co citation analysis results of CiteSpace, the highly cited literatures in the sample were determined. The top 10 literatures were selected for analysis, as shown in Table 1. First of all, the single article “Chinese American literature, which is symbiotic and prosperous with Asian American Literature”, was the most cited. The article was published by Professor Ziqing Zhang of the Institute of foreign literature



Fig. 2. Knowledge map of main research authors.

Note: The graphs involved in this paper are drawn by citespace software, the same below.

at Nanjing University in the authoritative magazine “foreign literature review”, with a citation frequency of 219. This document defines the concept of Chinese American literature, and systematically introduces the landmark works and reference books produced by Chinese American literature. Finally, it introduced the outstanding Chinese American novelists with distinctive characteristics in the American literary world one by one, such as Maxine Hong Kingston, Jianxiu Zhao, Lei zuwei, etc., and highly appreciated their tenacious resistance and vocal behavior in American multiculturalism, and improved their discourse with excellent cultural works.

The second most cited article is Toni Morrison’s study in China published by Zhiqing Du in contemporary foreign literature, with a citation frequency of 116. This article mainly reviews the domestic achievements of Morrison, the winner of the Nobel Prize for literature in the United States. Since the 1980s, the domestic research on Morrison’s works has gone through two stages: translation and in-depth research. Morrison’s works have made great contributions to the society, society, society and society with poetic language and super narrative techniques. Historical thinking and criticism, on the one hand, carry forward the charm of black traditional culture. On the other hand, it pays close attention to the fate of mankind and strives to safeguard the rights of special groups such as women and children. It is hoped that the Chinese literary world will also form a “black wave” of Morrison research.

The third most cited article is on the development stage and main content of Chinese American literature. Professor Aimin Cheng was published in

foreign languages magazine in 2007, with a citation frequency of 105. In chronological order, this document comprehensively combs the historical process of Chinese American literature for more than 100 years. Because Chinese Americans are in a weak position in a strong American society, several generations of Chinese American writers observe the unique survival experience of Chinese American groups through their literary works with the dual identities of China and the United States, and have the courage to voice Chinese culture in the collision between the two cultures.

The other seven papers published by Hongxin Jiang, Li Jin, Qichao Zhou, Bing Wu, Jincai Yang and Zhiwen Zhao have been cited more than 80 times, mainly focusing on British and American teaching, research characteristics, female literature, cross-cultural characteristics, “exotic, wilderness” image, literary innovation and other topics. These studies have caused extensive influence in the field of American literature research.

### An Analysis of the Hot Spots and Frontier Evolution of American Literature Research Based on Green Technology

#### *Analysis of Key Words in American Literature Research*

According to the intermediary centrality of keywords, we can evaluate the main content of the field of American literature research. Using CiteSpace software, we calculated a total of 383 keywords, and counted the top 20 hot keywords according to centrality.

Table 1. Top ten highly cited papers on American Literary Studies.

Serial number	Author	Times cited	Paper	Time	Published journal
1	Ziqing Zhang	219	On the development stage and theme of Chinese American Literature	2000-02	Foreign literature review
2	Zhiqing Du	116	Toni Morrison studies in China	2007-10	Contemporary Foreign Literature
3	Aimin Cheng	105	On the development stage and theme of Chinese American Literature	2003-12	foreign language
4	Jianghongxin	96	The ideal of University and the reform of British and American Literature Teaching	2005-02	foreign literature
5	Wu Bing	90	Reflections on the study of Chinese American Literature	2008-05	Foreign literature review
6	Li Jin	90	Feminist criticism of American Feminist Literature	2009-03	American Studies
7	Qichao Zhou	90	Unique cultural identity and “unique” color texture	2003-11	Foreign literature review
8	Bing Wu	87	From exotic and true reflection to criticism and creation	2001-08	Foreign literature
9	Jincai Yang	85	On the “wilderness” image in American Literature	2000-06	Foreign Literature Studies
10	Zhiwen Zhao	81	Chinese American literary innovation and Chinese cultural tradition	2003-07	Foreign Literature Studies

Table 2. Key words of American literature research.

Serial number	Centrality	Keyword	Sort	Centrality	Keyword
1	0.43	American Literature	11	0.03	World literature
2	0.2	Chinese american literature	12	0.03	Pulitzer Prize for Fiction
3	0.16	The study of American Literature	13	0.02	Orientalism
4	0.07	Intertextuality	14	0.02	Chinese American Writers
5	0.06	African american literature	15	0.02	Novelist
6	0.05	Tea culture	16	0.02	Chinese American Literature
7	0.04	History of American Literature	17	0.01	Hong Kingston
8	0.04	Asian American literature	18	0.01	American Fiction
9	0.03	Chinese American literature	19	0.01	Ethnic Literature
10	0.03	Ecocriticism	20	0.01	Literary criticism

See Table 2 for details, such as “American Literature”, “Chinese American Literature”, “intertextuality”, “African American Literature”, “tea culture”, “American literary history”, “ecological criticism”, etc. These topics represent the hottest direction of current research and are also the most valuable topics. Among them, “American Literature” has the highest centrality, with a value of 0.43, and “Chinese American Literature” has a centrality of 0.2, ranking second. It can be seen that the centrality of key words related to American literature research is low, mostly below 0.1, which is related to the fact that American literature is still in the stage of decentralized research.

#### *Cluster Analysis of Keywords in American Literature Research*

The results of keyword cluster analysis of 924 literatures on American literature research are shown in Fig. 3. The current research has formed seven clusters, namely #0 American literature, #1 Chinese American literature, #2 America, #3 National American Literature Research Association, #4 seminar, #5 African American literature, #6 Orientalism. On the whole, these clusters can be divided into three categories. The first category emphasizes the research objects, such as “American Literature”, “Chinese American Literature” and “African American Literature”; Second, highlight the content, such as “Orientalism”; Third, focus on discussion and exchange, including “National Institute of American Literature” and “seminar”. Further query found that the two clusters mainly included high-quality reviews of academic seminars related to American literature research, and shared the overall situation, basic themes and academic trends of the exchange. There were 38 literatures clustered by the “National Association for the study of American Literature” and 49 literatures clustered by “seminars”, with a slight overlap between the two. Therefore, it can be seen that the discussion and exchange of American literature research present

a positive atmosphere. The following is a review of the relevant literature on the important topics of the first two clusters:

“African American Literature” clustering.

It mainly reviews and studies the relevant literary theories and works of African American scholars. In the American literary world, African American literature appeared earlier. In 1773-2000 African American literary criticism, it is mentioned that literary works studying the intelligence quotient of African Americans have appeared since 1773. [19] According to statistics, domestic scholars have published a total of 68 literatures under the cluster of “African American Literature”, of which the hot keywords are: “African American Literature” (41), “black aesthetics” (6), “tonimorrison” (10), “black sex” (4), “Everett” (3). In African American literature, scholars mainly focus on racial equality, national traditional culture, political empowerment and the construction of black literature. The goals of most studies are consistent, but there are heterogeneity in specific strategies [20].

The authors who have published more than two articles on African American Literature in China are: Yukuo Wang (13), Baojie Li (3), Ruoxi Pu (3), Li Jin (2), etc. Therefore, it can be seen from the data that Professor Wang yukuo is a leading scholar in the study of African American literature, with outstanding achievements. In the 21<sup>st</sup> century, domestic scholars have focused on the works of well-known African American novelists, such as Morrison, Hughes, Walker and so on. Compared with foreign countries, the domestic research has not paid enough attention to the research of black nationalism, cross-border, creation and memory in African American literature, which is worthy of in-depth understanding and reflection. [21] In response to these unknowns, Professor Wang focused on the reflection, questioning and race of African American literature. In 2009, Professor Wang yukuo published the article “Reflections on African American literature, history and culture”, which pointed out that since 2008, Morrison has shifted



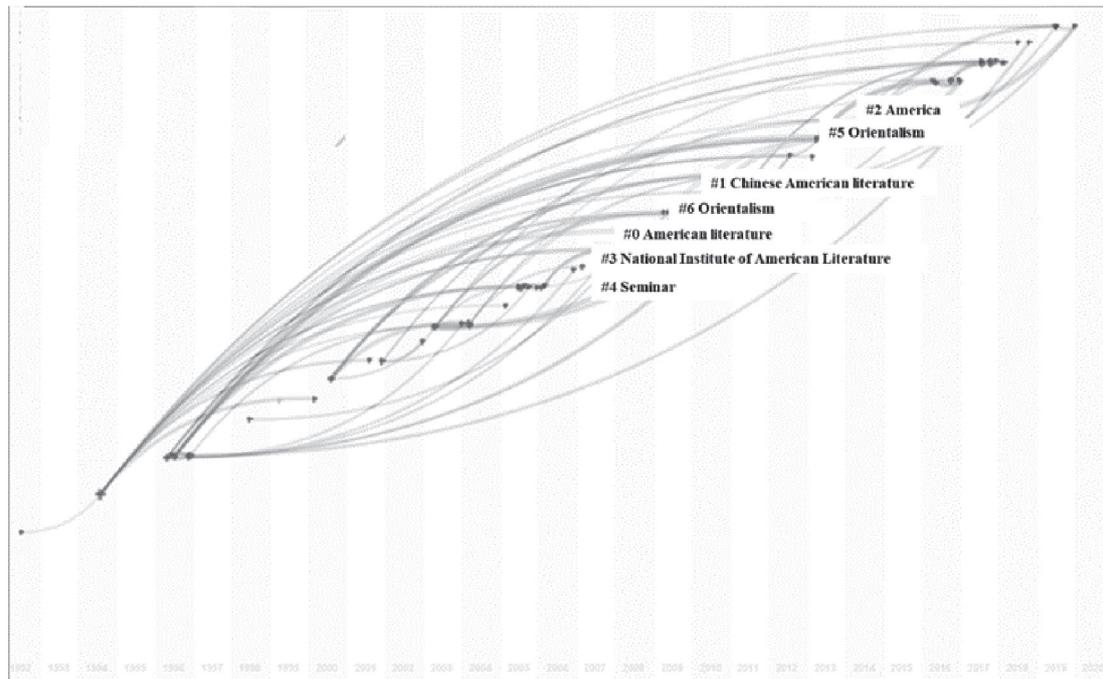


Fig. 4. Time zone map of keyword clustering in American literature research.

combat. In the second stage, from 2006 to 2009, during the seminar and exchange stage, academic groups such as the National Association for the study of American literature played a role in organizing various and large-scale seminars on American literature to rapidly expand the influence of domestic research. The third stage, 2010-2013, is the hot research stage of Chinese American literature. A total of 89 papers were published on this topic, accounting for 41.6% at this stage. The fourth stage, 2014-2016, is the hot research stage of African American literature. 62 papers were published in history, accounting for 30.6% at this stage.

To sum up, since 2006, the study of American literature has entered the fast lane in China through discussions and exchanges. The number of scholars studying has been increasing, the quality of the papers has been significantly enhanced, and the connotation of the research has been continuously extended, which has a fruitful impact on the strengthening of cultural exchanges and collisions between China and the United States.

#### *Analysis of the Evolution of Key Words in American Literature Research*

In order to fully understand the evolution of American literature research over time, a Timeline view of keywords is drawn through CiteSpace (see Fig. 5):

From 1992 to 2000, American literature was in its infancy.

As shown in Fig. 6, at this stage, the relative density of hot keywords in American literature research is low, and there are few relevant researchers and achievements. The main research hot keywords include:

“##1: American literature history”, “#2: Faulkner”, “#3: American literature research”, “#4: National American literature research”, “#5: American Southern Literature”, “#6: modernist literature”, “#7: literary tradition”, “#8: Black Literature”, etc.

During this period, American literature attracted attention. Scholars gradually broke the traditional study style research mode and turned to the new mode of centralized sharing through seminars to expand the influence of American literature research results. Famous magazines in the industry, such as American literary studies and Foreign literature, have hosted high-level seminars. The National Association for the study of American literature held its sixth, seventh, eighth and ninth annual conferences in 1992, 1994, 1996 and 1999, respectively. Yi Ge, ShouRen Wang, Hui Rong, Yifan Zhao, Jincai Yang and other scholars have played a leading role in promoting the spread of American literature. The focus of scholars' communication includes: American modernist literature, minority discourse, American literature blackbird, etc. By continually brainstorming ideas, scholars have gradually broadened their perspectives on American literature research and continuously attracted more young friends to devote themselves to the research in this field.

From 2001 to 2010, the study of American literature witnessed a spurt of growth.

During these ten years, American literature research has entered the spring of development. The subjects studied by scholars are very rich, including Asian Americans, African Americans and Chinese Americans; The focus is on both novelists and works. The hot keywords at this stage include “##1: Chinese American Literature”, “#2: Maxine Hong Kingston”, “#3: Asian

American Literature”, “#4: Chinese American”, “#5: Emerson”, “#6: Whitman”, “#7: Faulkner”, “#8: African American Literature”, “#9: Chinese American Literature”, “#10: globalization”, and “#11: literary criticism”, “#12: American fiction”, “#13: Hemingway”, “#14: Dreiser”, “#15: Mark Twain”, “#16: Melville”, “#17: American nation”, “#18: literary tradition”, etc., showing a prosperous academic atmosphere.

At this stage, Professor Zhang Ziqing’s “Chinese American literature, which is symbiotic and co prosperous with Asian American Literature”, is the most influential. This article systematically analyzes the relationship between Chinese American and Asian American literature, explains the living conditions of Asian American groups represented by Asian American literary works in the past 30 years in American society, and depicts the survival picture of anxiety, confusion, homesickness and tenderness. The success of writers such as Jianxiu Zhao, Maxine Hong Kingston, Yanfu Li and Yuxue Wang has enhanced their confidence in the integration of Chinese Americans into American society. In terms of the authors of the study, there are not only famous professors carrying flags and tripods, but also young talents who have made in-depth explorations, such as Ruoxi Pu, Ningkuang Jiang, Tiesheng Hu, Yukuo Wang, Yubei Zhou, Jianhua Yu, Yuxiao Zhang, Peihong Wen, Li Zeng, Yanbin Kang, Gongzhao Li, Jian Shi, Tao Wan, Yuejun Zhang, etc.

From 2011 to 2022, the prosperity and stability of American literature research were normal.

At this stage, the study of American literature tends to be stable. The content and direction of the study are repetitive and cross with that of the second stage. At the same time, it continues to develop in an innovative way. From the perspective of hot keywords, they mainly include “#1: Chinese American Literature”, “#2: African American Literature”, “#3: American literary history”, “#4: Chinese American writers”, “#5: Ethnic Literature”, “#6: Maxine Hong Kingston”, “#7: novelist”,

“#8: literary tradition”, “#9: Melville”, “#10: tea culture”, “#11: literary criticism”, “#12: novel creation”, “#13: ecological criticism”, “#14: racism”, “#15: Pulitzer Prize for fiction”, “#16: Minority Literature”, “#17: literary classics”, “#18: Puritanism”, “#19: Black aesthetics”, “#20: Realism”, etc.

From the above key words, it can be seen that in addition to the analysis of traditional writers and novels, the critical analysis of American literature has increasingly become a new hot spot and mainstream. For example, in 2010, Jianhui Wang wrote an article in Contemporary Foreign Literature criticizing the negative effects of racism on Asian American men. In 2018, Zenghong Wang focused on the analysis of the history of mixed race literature in American literature and refuted the wrong racism in American society in a critical way.

### An Analysis of the Trends and Frontiers of American Literature Research

From the analysis of the hot keywords in the previous article, we can see that due to the changes of the times, the research contents and themes of scholars have evolved dynamically. In order to predict and judge the frontier trend of American literature research, based on Kleinberg’s word frequency monitoring algorithm, CiteSpace’s emergent word analysis is used.

As shown in Table 3, from 2019 to 2022, there were two prominent keywords in the field of American literature research, namely, “tea culture” and “novelist”. Among them, “tea culture” had a high incidence since 2016 and 2017, and “novelist” appeared in 2013 and 2014, respectively. This fully shows that domestic scholars pay more attention to the cultural transmission of tea culture in American culture, which shows that the long-standing tea culture of the Chinese nation has an important impact on the lives of Chinese Americans. From the specific number of papers published, the number of papers published in Fujian tea reached 13.

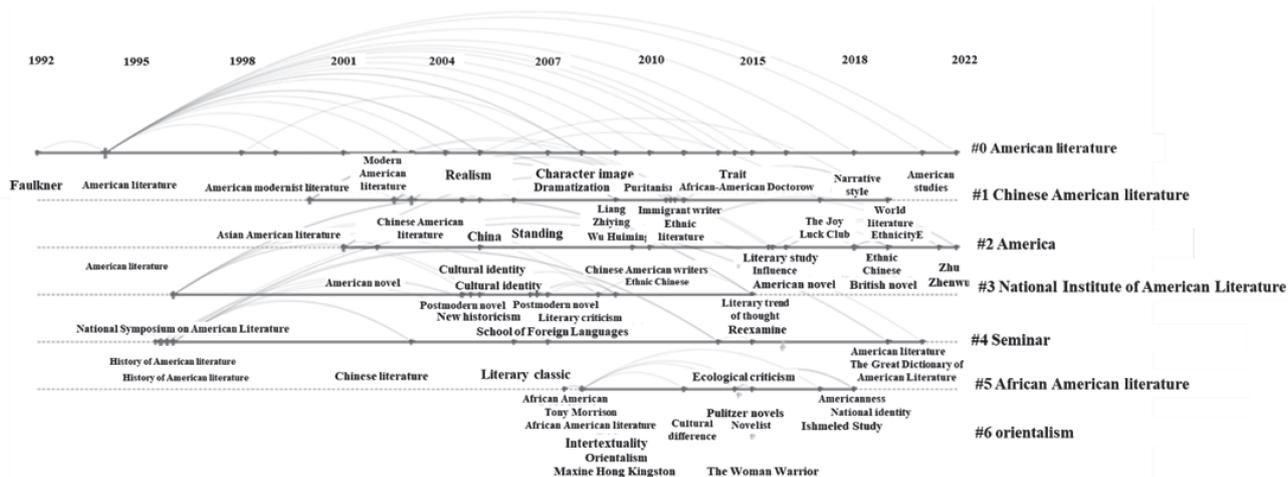


Fig. 5. Key words timeline map of American literature research.



important carrier and media to spread the frontier trends of American literature research.

### Acknowledgments

This research was funded by National Social Science Foundation project, named a study on the spatial writing of Chinese American literature and the construction of national identity (19CWW019).

### Conflict of Interest

The authors declare no conflict of interest.

### References

- LI L., LI W. The promoting effect of green technology innovations on sustainable supply chain development: evidence from china's transport sector. *Sustainability*, 14, **2022**.
- LV Z., LOU R., SINGH A.K. Transfer learning powered resource optimization for Green Computing in 5 g aided industrial Internet of things. *Acm transactions on Internet technology*, **2021**.
- LIM J.S., LI C., FAN Y.V. how circular economy and green technology can address sustainable development goals? *Journal of cleaner production*, **333**, 130161, **2022**.
- HABIBA U., XING B.C., ANWAR A. Do green technology innovations, financial development, and renewable energy use help to cure carbon emissions? *Renewable energy*, (7): 193, **2022**.
- LIU H., ZHANG Z., ZHANG T. Shale gas investment decision making: green and effective development under market, technology and environment uncertainties. *Applied energy*, 306, **2022**.
- ZHAO Y. Digital protection of Cultural Heritage Based on Web technology. *Mmathematical problems in engineering*, **2022**.
- HROUGA M., SBIHI A., CHAVALLARD M. The potentials of combining blockchain technology and Internet of things for digital reverse supply chain: a case study. *journal of cleaner production*, 337, 130609, **2022**.
- CHANG Y., LU Z., SUI J. Biometrics data visualization of ginsenosides in antibiotic investigations. *The American Journal of Chinese medicine*, **51** (1), 35, **2023**.
- PANG T., SHEN J. Visualizing the landscape and evolution of capacitive deionization by scientific analysis. *Desalination*, **527**, 115562, **2022**.
- LU Z.J. On the origin of Chinese New Literature and American literature . *Journal of Capital Normal University (SOCIAL SCIENCE EDITION)*, (05), 98, **2021**.
- XIU L.M. A restricted view on American literature research in the 70 years since the founding of the people's Republic of China – Taking Melville as an example. *Foreign literature*, (03), 30, **2019**.
- DU H.M. Knowledge map of minority literature research in the new century – Based on CiteSpace III visual analysis centered on CSSCI database . *Journal of Central University for Nationalities: Philosophy and Social Sciences Edition*, (5), 8, **2017**.
- CHAO M.C. CiteSpace II: detecting and visualizing emerging trends and transient patterns in scientific literature. *Journal of the American Society for Information Science & technology*, **2006**.
- LI J. CHEN C.M. CiteSpace scientific text mining and visualization. *Capital University of economics and business press*, **2016**.
- CANTILLO J., JUAN C.M., CONCEPCI R.A. Visualization analysis of seabream and seabass aquaculture research using citespace. *Aquaculture research*, **2021**.
- SAHIN A., YILMAZ G. Local food research: a bibliometric review using Citespace II (1970-2020). *Library hitech*, (3), 40, **2022**.
- CANTILLO J., JUAN C., MARTIN C.R. Visualization analysis of seabream and seabass aquaculture research using CiteSpace. *Aquaculture Research*, **2021**.
- RAWAT K.S., SOOD S.K. Knowledge mapping of computer applications in education using CiteSpace. *Computer Applications in Engineering Education*, **2021**.
- WANG Y.K. New trends in the study of African American Literature in the new century -- Also on what is African American literature? *Trends in foreign literature*, (01), 60, **2013**.
- LUO H. Identity politics in the 20th Century African American literary criticism . *Academic exploration*, (11), 100, **2016**.
- WANG Y.K. African American Literature Studies in China . *Foreign language research*, (05), 108, **2011**.
- WANG Y.K. Reflections on African American literature, history and Culture – a review of the interview with Morrison. *Foreign literature research*, **31** (02), 169, **2009**.
- WANG Y.K. Morrison, a critic who reflects on African American culture and questions American literary classics. *Contemporary foreign literature*, **34** (02), 5, **2013**.
- WANG Y.K. Baker, a critic who sticks to the black cultural position. *Foreign literature* (04), 46, **2018**.
- WANG Y.K. Dialogue, reflection and questioning – a study of Everett's novel creation. *Foreign language research*, **35** (05), 92, **2018**.
- LIU H.Y. Explore cultural integration from the tea culture concept in Chinese American literary works. *Fujian tea*, **39** (08), 403, **2017**.
- LI Y.Y. A brief review of American Literature in 2012. *Dynamic research on foreign literature*, (10), 9, **2013**.
- HARRISON K., FORD J., KARANDE K. The development and validation of a Chinese American Association scale. *journal of business research* (4.4), 143, **2022**.