ДОНСКОЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

УПРАВЛЕНИЕ ДИСТАНЦИОННОГО ОБУЧЕНИЯ И ПОВЫШЕНИЯ КВАЛИФИКАЦИИ

Кафедра «Лингвистика и иностранные языки»

Методические указания и контрольные задания

по дисциплине

«Языковая коммуникация в профессиональной сфере на иностранном языке»

Для магистрантов заочной формы обучения по направлению 15.04.01

Автор

Невольникова С.В.

Ростов-на-Дону, 2018

Аннотация

Методические указания и контрольные задания по дисциплине «Языковая коммуникация в профессиональной сфере на иностранном языке» предназначены для студентов заочной формы обучения направления 15.04.01 «Машиностроение»

Автор

к.фил.н., доцент Невольникова С.В.

Оглавление

ТРЕБОВАНИЯ К ЗАЧЕТУ ДЛЯ МАГИСТРАНТОВ ПО ДИСЦИПЛИНЕ

«ЯЗЫКОВАЯ КОММУНИКАЦИЯ В ПРОФЕССИОНАЛЬНОЙ СФЕРЕ НА ИНОСТРАННОМ ЯЗЫКЕ»

В рамках самостоятельной работы магистрантам необходимо подготовить к зачету:

1. Чтение и переводаутентичных текстов (3 текста) по направлению подготовки. Общий объем –15000 печатных знаков. Составить словарь терминов (100-120 единиц). Написать 3 аннотации к прочитанным текстам. Преподаватель проверяет чтение вслух и устный перевод с листа.
2. Письменный перевод аутентичных текстов (статей, монографий) по выбранной магистрантом теме или проблеме научно-профессиональной направленности объемом 5000 печатных знаков.
3. Сообщение-презентация на иностранном языке по выбранной магистрантом теме или проблеме научно-профессиональной направленности. Оценивается содержательность, адекватная реализация коммуникативного намерения, логичность, связность, смысловая и структурная завершенность.

Общие требования к выполнению контрольной работы

Памятка магистранту

Контрольное задание предлагается в четырех вариантах. Номер варианта определяется по последней цифре номера зачетной книжки студента:

1, 2 , 3 – 1-й вариант;
4, 5 , 6 – 2-й вариант;
7 , 8 – 3-й вариант;
9 , 0 – 4-й вариант.

Контрольная работа должна быть выполнена в отдельной тетради. На обложке тетради необходимо указать следующие данные: факультет, курс, номер группы, фамилию, имя и отчество, дату, номер контрольного задания и вариант.

Первую страницу необходимо оставить чистой для замечаний и рецензии преподавателя.

Все предлагаемые к выполнению задания (включая текст заданий на английском языке) переписываются на левой стороне разворота тетради, а выполняются на правой.

Контрольная работа должна быть написана четким подчерком, для замечаний преподавателя следует оставить поля.

Контрольная работа, выполненная не полностью или не отвечающая вышеприведенным требованиям, не проверяется и не засчитывается.

Проверенная контрольная работа должна быть переработана студентом (та часть ее, где содержатся ошибки и неточности перевода или неправильное выполнение заданий) в соответствии с замечаниями и методическими указаниями преподавателя. В той же тетради следует выполнить «Работу над ошибками», представив ее на защите контрольной работы.

Четыре варианта контрольной работы имеют одинаковую структуру. Все задания должны быть выполнены в письменной форме.

ВАРИАНТ 1

I. Translate 1, 2, 3, 4 paragraphs into Russian.

Deep Fault Drilling Project—Alpine Fault, New Zealand Scientific Drilling,

Workshop Reports by John Townend, Rupert Sutherland, and Virginia Toy

1. **Introduction** The mid-crust is the locus of several fundamental geological and geophysical phenomena. These include the transitions from brittle to ductile behavior and from unstable to stable frictional sliding; earthquake nucleation and predominant moment release; the peak in the crustal stress envelope; the transition from predominantly cataclastic to mylonitic fault rocks; and mineralization associated with fracture permeability. Current understanding of faulting, seismogenesis, and mineralization in this tectonically important zone is largely based on remote geophysical observations of active faults and direct geological observations of fossil faults.

2. The Alpine Fault, New

3. Zealand, is a major dextral-reverse fault that is thought to fail in large earthquakes (Mw ~7.9) every 200–400 years and to have last ruptured in the year 1717. Ongoing uplift has rapidly exhumed a crustal section from depths of as much as 30 km, yielding a young (20-km depths, with evidence for complex, transient semi-brittle behavior at high strain-rates and fluid pressure cycling on relatively short, possibly seismic, timescales (Wightman and Little, 2007). The base of the hanging wall seismogenic zone inferred from contemporary seismicity is relatively shallow (~8–12 km; Leitner et al., 2001). Geodetic studies are consistent with a shallow (5–10 km) depth for full fault locking (Beavan et al., 1999), though some degree of interseismic coupling may persist to as deep as ~18 km (Wallace et al., 2007). In the mid-crust, the fault zone exhibits low seismic wave speeds and high attenuation (Stern et al., 2001; Eberhart-Phillips and Bannister, 2002; Stern et al., 2007 and references therein) and high electrical conductivity (Wannamaker et al., 2002), suggesting interconnected saline fluids at high pressures within the ductile regime.

4. Why the Alpine Fault? The Alpine Fault is a well-studied active continental fault that, unlike many other similar faults elsewhere, has not produced large earthquakes or measureable creep in historic times; however, paleoseismic data suggest that it has produced large earthquakes in the Holocene and that it is late in the earthquake cy-

cle. The Alpine Fault's dextral-reverse kinematics, non-vertical dip, and rapid slip rates have exhumed to the ground surface a fresh sample of fault rocks inferred to have formed at depths of as much as 30 km within the last few million years. Due to its relatively steep dip, fluid-saturated state, and high near-surface geothermal gradient, the Alpine Fault serves further as an analogue for environments in which economically significant mesothermal mineralization has occurred (Koons and Craw, 1991; Weinberg et al., 2005; Sibson, 2007).

5. The following factors and related logistical considerations make the Alpine Fault a globally significant target of fundamental research into tectonic deformation, seismic hazard, and mineral resource formation: Figure 2. Schematic cross-section of an oblique thrust segment within the central section of the Alpine Fault. Reproduced by permission of the American Geophysical Union after Norris and Cooper, 2007. Copyright 2007 American Geophysical Union. Workshop Reports Scientific Drilling, No. 8, September 2009 77 vicinity of the borehole itself and further afield using fault-zone guided waves, for instance (Li and Malin, 2008). It also provides a mechanism of calibrating and interpreting remote observations, such as those provided by the South Island Geophysical Transect project (SIGHT; Okaya et al., 2002; Stern et al., 2007), and linking these to surface data and rupture models. Laboratory measurements made on samples retrieved from depth, as well as measurements of the conditions under which those samples were collected, are required to more accurately describe the physical characteristics of fault rocks during coseismic rupture, and to account for strong ground motions (Beeler, 2006; Rice and Cocco, 2007). Figure 4 illustrates the idealized geometry of the Alpine Fault in the central Southern Alps (inset stereogram) and a schematic view of the fault plane (as viewed normal to the plane), with the locations of key surface outcrops and faultcrossing roads marked. The regional fault plane strikes northeast and dips at approximately 50° to the southeast on

6. • The >300-km along-strike exposure of a relatively uniform-lithology hanging wall and derived fault rocks that formed during the current tectonic regime, providing an exceptional reference for interpreting observations of contemporary processes and structure and older, exhumed structure

• Rapid uplift resulting in advection of crustal isotherms so that brittle-ductile transition processes can be studied at shallower depths than possible in other active transpressional settings

• Sequences of fault rocks developed during unidirectional ex-

humation on well-determined trajectories over relatively short time periods

• The opportunity to study on an ongoing basis the state of a locked fault thought to be late in the earthquake cycle

• Well-determined, rapid Quaternary slip rates • An extensive body of geological and geophysical knowledge, and a modern, nationwide geophysical monitoring network (GeoNet; Fig. 3)

• A non-vertical fault orientation enabling fault penetration with either subvertical or incline holes

• A relatively benign political and physical environment in which to operate with existing petroleum industry onshore drilling activity and supporting infrastructure.

7. Why Drill? Drawing inferences about conditions and processes prevailing at seismogenic or greater depths based on outcrop observations is complicated by the fact that rocks exposed at the surface may have undergone modifications—structural, mineralogical, and geochemical—during their exhumation and at shallow depths. One way of examining and accounting for the character and extent of upper crustal modifications is to examine a rock mass at depth whose future exhumation trajectory intersects a present-day surface outcrop (i.e., to treat the rock mass at depth as the protolith of the modified rocks now observed at the surface).

8. The Alpine Fault kinematics are such that fault rocks evolve progressively on a path towards the surface, where they exit the system. This allows examination of progressive fault rock development using paired borehole and surface observations that is not possible on purely strike-slip faults where fault rocks may be continuously reworked at the same depth throughout the fault's history. The second principal reason for drilling into the central Alpine Fault is to address the physics of faulting and seismogenesis by gaining access to the fault zone at depth and determining the temperature, fluid pressure and chemistry, bulk rock properties, and stress conditions prevailing at a late stage in the earthquake cycle, and establishing a long-term monitoring capability.

9. Drilling enables continuous observations to be made of the fault zone in the immediate Figure 3. Map of the central section of the Alpine Fault showing existing infrastructure, the onshore portions of the South Island Geophysical Transect (SIGHT) active-source seismic lines, background seismicity, and the locations of possible drill sites. Figure 4. Schematic view normal to the mean fault plane in the central Alpine Fault region showing rock uplift trajectories and key outcrop

locations. Place names shown in bold correspond to prospective drill sites. "A" (southwest) and "B" (northeast) are marked on Figure 1 for reference. "T" and "R" denote tracks and roads, respectively, crossing the fault trace. The short red lines mark strike-slip sections of the fault trace.

10. The inset summarizes the mean fault geometry in stereographic projection. 78 Scientific Drilling, No. 8, September 2009 Workshop Reports average, and northeast-plunging striations define a mean rake of ~38° NE (Norris and Cooper, 1995; 1997; Little et al., 2002). Figure 4 demonstrates that there are several points along the fault at which several kilometers' access to the hanging wall is possible northeast of known surface outcrops. This means, for example, that a vertical borehole drilled approximately 3.5 km southeast of where the Alpine Fault crosses the Whataroa River would intersect the Alpine Fault at a depth of ~4 km, sampling material expected to breach the surface in ~0.4 Myr.

11. Most importantly, however, the point at which the borehole intersected the fault plane would lie on the exhumation trajectory of the rocks now exposed in the Gaunt Creek outcrop. Key Discussion Points During the course of the workshop, three principal scientific themes and associated research goals emerged: 1. Evolution of an orogenic system—to determine how an active transpressional plate boundary system interacts with climate, landscape, and hydrological and thermal regimes; 2. Ductile and brittle deformation mechanisms—to determine via integrated surface and borehole observations what deformation mechanisms, mineralogical processes and conditions characterize the ductile and brittle regimes, and their interaction; 3. Seismogenesis and the habitat of earthquakes—to examine a major, locked, late-stage, continental fault at depth, determine the conditions under which earthquakes occur, and characterize the materials within which ruptures propagate.

12. The accompanying group discussions identified a number of common scientific issues related to the Alpine Fault and major continental faults in general, which are summarized below. Ambient Conditions A key theme to emerge from the group discussions was the vital importance of understanding the thermal and fluid flow regimes surrounding the Alpine Fault. Current thermal and hydrological models of the shallow to mid-crust in the vicinity of the Alpine Fault, particularly on the hanging wall, are limited by sparse data and consequent uncertainties in the maximum depth and pattern of topographically-induced fluid flow, the permeability structure, and shear heating ef-

fects.

13. The present-day shallow thermal regime west of the Alpine Fault can be inferred from petroleum exploration wells (Townend, 1999), but data are scarce in the immediate vicinity of the Alpine Fault's surface trace and further east. Models of the thermal structure of the Southern Alps orogen (Koons, 1987; Allis and Shi, 1995; Upton et al., 1995; Batt and Braun, 1999; Gerbault et al., 2003) differ quite markedly, and further work is required to reconcile these models with geodetic and seismological estimates of interseismic locking depths and the seismogenic thickness. Temperature, fluid pressure and chemistry, and stress are all likely to be strongly perturbed at shallow depths by the pronounced topographic relief (as is the Alpine Fault's shallow structure itself; see below) and to differ more markedly from conditions prevailing at depth than has been the case in active fault drilling experiments elsewhere (Zoback et al., 2007).

14. Detailed modeling of all three fields to determine how deep these effects persist is a high priority as plans for future drilling evolve. Fluid and Rock Geochemistry The full armory of elemental and isotopic techniques has yet to be brought to bear on fluids sampled in hot springs emanating from around the fault and trapped in exhumed veins within the fault zone and hanging wall. It is likely that more complete suites of geochemical data will aid the identification of fluid sources and flow-paths (Upton et al., 1995; Koons et al., 1998), and in particular enable more detailed analysis of progressive fluid-rock interaction. Among the outstanding questions related to fluid discharge are those of what factors control the number of hot springs along the Alpine Fault, their temperatures.

II. Make the summary of the text. Use the following phrase

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The head-line of the article (text) is …
2. The author of the article (text) is …
The article is written by …
3. It was published (printed) in …
4. The main idea of the article (text) is …
The article is about …
The article is devoted to …
The article deals with …
The article touches upon …
5. The purpose of the article is to give the reader some infor-

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The aim of the article is to provide the reader with some material on …

6. The author starts by telling the readers (about, that) …

The author writes (states, stresses, thinks, points out) that …

The article describes …

According to the article (text) …

Further the author goes on to say that …

7. The article is (can be) divided into 4(5-7) parts.

The first part deals with (is about, touches upon) …

8. In conclusion the article tells …

The author comes to the conclusion that …

9. I found the article interesting (important, dull, of no value, easy, too hard to understand).

III. Make the abstract of the text.

IV Write 10 key words of the text and translate them into Russian.

ВАРИАНТ 2

I. Translate 5, 6, 7, 8 paragraphs into Russian.

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III. Make the abstract of the text.

IV Write 10 key words of the text and translate them into Russian.

ВАРИАНТ 3

I. Translate 9, 10, 11 paragraphs into Russian.

Deep Fault Drilling Project—Alpine Fault, New Zealand Scientific Drilling,

Workshop Reports by John Townend, Rupert Sutherland, and Virginia Toy

1. **Introduction** The mid-crust is the locus of several fundamental geological and geophysical phenomena. These include the transitions from brittle to ductile behavior and from unstable to stable frictional sliding; earthquake nucleation and predominant moment release; the peak in the crustal stress envelope; the transition from predominantly cataclastic to mylonitic fault rocks; and mineralization associated with fracture permeability. Current understanding of faulting, seismogenesis, and mineralization in this tectonically important zone is largely based on remote geophysical observations of active faults and direct geological observations of fossil faults.

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8. The Alpine Fault kinematics are such that fault rocks evolve progressively on a path towards the surface, where they exit the system. This allows examination of progressive fault rock development using paired borehole and surface observations that is not possible on purely strike-slip faults where fault rocks may be continuously reworked at the same depth throughout the fault's history. The second principal reason for drilling into the central Alpine Fault is to address the physics of faulting and seismogenesis by gaining access to the fault zone at depth and determining the temperature, fluid pressure and chemistry, bulk rock properties, and stress conditions prevailing at a late stage in the earthquake cycle, and establishing a long-term monitoring capability.

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11. Most importantly, however, the point at which the borehole intersected the fault plane would lie on the exhumation trajectory of the rocks now exposed in the Gaunt Creek outcrop. Key Discussion Points During the course of the workshop, three principal scientific themes and associated research goals emerged: 1. Evolution of an orogenic system—to determine how an active transpressional plate boundary system interacts with climate, landscape, and hydrological and thermal regimes; 2. Ductile and brittle deformation mechanisms—to determine via integrated surface and borehole observations what deformation mechanisms, mineralogical processes and conditions characterize the ductile and brittle regimes, and their interaction; 3. Seismogenesis and the habitat of earthquakes—to examine a major, locked, late-stage, continental fault at depth, determine the conditions under which earthquakes occur, and characterize the materials within which ruptures propagate.

12. The accompanying group discussions identified a number of common scientific issues related to the Alpine Fault and major continental faults in general, which are summarized below. Ambient Conditions A key theme to emerge from the group discussions was the vital importance of understanding the thermal and fluid flow regimes surrounding the Alpine Fault. Current thermal and hydrological models of the shallow to mid-crust in the vicinity of the Alpine Fault, particularly on the hanging wall, are limited by sparse data and consequent uncertainties in the maximum depth and pattern of topographically-induced fluid flow, the permeability structure, and shear heating ef-

fects.

13. The present-day shallow thermal regime west of the Alpine Fault can be inferred from petroleum exploration wells (Townend, 1999), but data are scarce in the immediate vicinity of the Alpine Fault's surface trace and further east. Models of the thermal structure of the Southern Alps orogen (Koons, 1987; Allis and Shi, 1995; Upton et al., 1995; Batt and Braun, 1999; Gerbault et al., 2003) differ quite markedly, and further work is required to reconcile these models with geodetic and seismological estimates of interseismic locking depths and the seismogenic thickness. Temperature, fluid pressure and chemistry, and stress are all likely to be strongly perturbed at shallow depths by the pronounced topographic relief (as is the Alpine Fault's shallow structure itself; see below) and to differ more markedly from conditions prevailing at depth than has been the case in active fault drilling experiments elsewhere (Zoback et al., 2007).

14. Detailed modeling of all three fields to determine how deep these effects persist is a high priority as plans for future drilling evolve. Fluid and Rock Geochemistry The full armory of elemental and isotopic techniques has yet to be brought to bear on fluids sampled in hot springs emanating from around the fault and trapped in exhumed veins within the fault zone and hanging wall. It is likely that more complete suites of geochemical data will aid the identification of fluid sources and flow-paths (Upton et al., 1995; Koons et al., 1998), and in particular enable more detailed analysis of progressive fluid-rock interaction. Among the outstanding questions related to fluid discharge are those of what factors control the number of hot springs along the Alpine Fault, their temperatures.

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ВАРИАНТ 4

I. Translate 12, 13, 14 paragraphs into Russian.

Deep Fault Drilling Project—Alpine Fault, New Zealand Scientific Drilling,

Workshop Reports by John Townend, Rupert Sutherland, and Virginia Toy

1. **Introduction** The mid-crust is the locus of several fundamental geological and geophysical phenomena. These include the transitions from brittle to ductile behavior and from unstable to stable frictional sliding; earthquake nucleation and predominant moment release; the peak in the crustal stress envelope; the transition from predominantly cataclastic to mylonitic fault rocks; and mineralization associated with fracture permeability. Current understanding of faulting, seismogenesis, and mineralization in this tectonically important zone is largely based on remote geophysical observations of active faults and direct geological observations of fossil faults.

2. The Alpine Fault, New

3. Zealand, is a major dextral-reverse fault that is thought to fail in large earthquakes (Mw ~7.9) every 200–400 years and to have last ruptured in the year 1717. Ongoing uplift has rapidly exhumed a crustal section from depths of as much as 30 km, yielding a young (20-km depths, with evidence for complex, transient semi-brittle behavior at high strain-rates and fluid pressure cycling on relatively short, possibly seismic, timescales (Wightman and Little, 2007). The base of the hanging wall seismogenic zone inferred from contemporary seismicity is relatively shallow (~8–12 km; Leitner et al., 2001). Geodetic studies are consistent with a shallow (5–10 km) depth for full fault locking (Beavan et al., 1999), though some degree of interseismic coupling may persist to as deep as ~18 km (Wallace et al., 2007). In the mid-crust, the fault zone exhibits low seismic wave speeds and high attenuation (Stern et al., 2001; Eberhart-Phillips and Bannister, 2002; Stern et al., 2007 and references therein) and high electrical conductivity (Wannamaker et al., 2002), suggesting interconnected saline fluids at high pressures within the ductile regime.

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